Paying for Social Care

An independent report commissioned by the Welsh Government

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Acknowledgements

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Executive Summary

The need and the gap

Wales faces a problem in providing social care for the elderly in coming years. Social care spending per head of the population aged over 65 has been declining. This may reflect austerity on local authority budgets and could indicate unmet demand for care. An increase in spending per head may be necessary in any case to ensure care is of an adequate standard and to enable workers in the care sector to be paid a living wage without jeopardising the viability of care homes.

Meanwhile, it is certain that the population aged over 65, and especially people over 70 will increase in absolute terms and as a proportion of the population over the next two decades. The ratio of over 70s to those aged 20-69 will rise from some 23 per cent to 37 per cent by the early 2040s on central official projections. The consequence of this for demand for social care is subject to wide uncertainties but the direction is clear; demand will increase and spending must rise. In this study, demand for spending is projected to rise by just over 85 per cent by 2035, at 2016-17 prices, comprising a 20 per cent increase in spending per head and an increase in numbers requiring care of over 55 per cent. That projection is within the range of other projections made by specialists.

Even if the UK economy and the Welsh budget grows at 1 ½ per cent a year faster than care costs, spending a constant proportion of the budget on care will lead to a real increase in funding of only around 30 per cent for social care of the elderly by 2035. That would leave a gap between demand and available resources of over 50 per cent of current spending. Either care standards will fall, conditions for access to assisted care will be tightened considerably or a new revenue source must be found. The study examines options for new revenue that will allow the gap to be filled.

A publicly acceptable source of revenue

A tax increase or levy to raise the necessary funds must be acceptable to the public. It should also be fair and effective in raising the money. The only tax base that the Welsh Government will have that could generate the necessary revenue is income from employment and self-employment. Other bases are either too small, undeveloped or undevolved.

If a scheme is to enjoy public support the additional levy or tax increases must be kept moderate. Research indicates the public thinks the cost of old-age care should be shared between the individual and the state ad there is little support for entirely free care wholly tax-financed.

The study considers four questions:

- Should any tax or levy on incomes be hypothecated to social care rather than being part of general revenue?

- Should tax payments for social care be part of a contributory scheme where a record of payments is necessary to enjoy some of the benefits?
- Apart from fairness to people on different incomes, how can the system ensure intergenerational fairness so all age cohorts get a comparable deal?
- Would the scheme work better on the pay-as-you-go principle whereby revenues go immediately to support care or should it be funded, whereby revenues go into a fund that is invested to meet future care needs?

There is evidence that the public is readier to accept taxes that are hypothecated to purposes of which it approves. Nonetheless hypothecation is not popular with fiscal experts and is uncommon. It causes rigidities that make budgets harder to manage. Hypothecation can be illusory too, if the hypothecated tax is not the only source of revenue for the purpose in question; then the government can divert other resources that would have gone to social care to offset the effects of hypothecation. In spite of these drawbacks, it may be that hypothecation has an important role in reconciling the public to a tax increase since there is widespread awareness of the problems with social care for the elderly.

Given the open border with England and a tendency for more people to retire to Wales than retire out of it, improved conditions or easier access to care support could mean Welsh taxpayers supporting increasing numbers of people who have not contributed to a hypothecated tax. Fairness and public acceptability both point to the advantages of a contributory system where benefits depend on a history of contributions. Such a system could be expensive however, requiring the fiscal authority to record individual contributions and track people crossing the border for periods of work elsewhere. The extent to which a contributory system is practical and the criteria for eligibility must be determined after discussion with Her Majesty's Revenue and Customs department (HMRC).

Whether the scheme is contributory or not, contributions should be income related - but should they also be age-cohort related; i.e. should tax rates depend on the age at which a Welsh resident begins to pay? Since the government cannot credibly promise that care will always improve, tax-payers of all ages are getting the same promise about social care. It seems unfair then that someone who will contribute for forty years should pay at the same rate as someone who will pay for only ten. It is particularly important at present not to increase the burden on younger tax payers in order to subsidise the elderly. The steep rise in house prices and the ending of free higher education has left younger generations no better and sometimes worse off than their elders were at the same time of life. There is an argument, therefore, for levying tax rates that depend on age cohort as well as income. Doing so could improve intergenerational fairness and it would mean that people pay more at a time of life when they are more conscious of the need to make provision for old-age care. Once again the drawback of making tax dependent on age as well as income is greater cost of tax collection.

Should a tax or levy be used immediately for social care or fed into a fund, most of which would be spent on social care in the future – a so-called funded scheme? A funded scheme would be slightly more expensive to administer. It must be ascertained that there would be time enough to build up a worthwhile fund before care needs compelled the government to devote tax revenues to meeting them. If that condition can be met and administration costs can be kept down, funding has advantages. It is easier to ensure fairness between generations and age cohorts, since tax rates can be smoothed and pay-outs managed in a way that is not possible with pay-as-you-go. A fund could also provide more revenue in the longer run than pay-as-you-go

since investment returns have tended to exceed the growth of wages. It would, in any case diversify the sources of future revenue away from wages. Whether funding is a good thing partly depends on macroeconomic considerations: does the economy suffer from excess saving and investment or are those running at a sub-optimal rate? Whatever the situation in developed economies in general, it is highly probable that more saving and investment would be advantageous in the Welsh case. A social care fund could also be a source of investment finance for Welsh infrastructure or similar projects.

Whatever the shape of the scheme answering the four questions discussed above, there would be a case for changing the current wealth test for receiving care support. If a tax is to enjoy wide acceptability, home-owners or the moderately wealthy would need to see a potential benefit from their care-tax contributions. Instead of a ceiling for wealth above which all care costs are borne by the individual, only a proportion of wealth should be taken for care costs. Otherwise a person with a house could make a working lifetime's contribution and still end up paying for all their care and lose much of the equity in their home. The ability to retain some of that equity would be a benefit of tax contributions if the means-test rules were changed.

A social care fund

If Wales opts for a funded scheme, it would be creating a new public institution. Any fund should be a statutory body with its own board of trustees answerable to the government or National Assembly. The fund should be run in as open a manner as possible with the fund's mandate, terms of disbursement of funds for care, method of appointment of trustees all made public. When operational the fund should publish periodic reports of operating expenses, including salaries paid, and investment returns. The public should be admitted to an AGM and consulted on matters like what ethical conditions or restrictions should be applied to potential investments.

The fund would invest in a balanced portfolio in which international equities predominated. A minor part of the fund could be invested in profitable projects in Wales such as infrastructure guaranteed by the Welsh Government or social housing. Outsourcing to active fund managers would generally be avoided on the grounds of cost. Investment in equities could be semi-passive with tailored indices, a so-called "smart beta" approach. Asset allocation would be managed with regard to limiting risk and matching liabilities.

The big risk with a fund is that its success depends on getting adequate investment returns, which cannot be guaranteed. That risk arises in a context where social care needs will be rising quite steeply with population ageing. The study asks: at acceptable tax rates can enough revenue be spared to build up a fund while meeting care needs – and what are the chances that investment returns will reward the effort? The question is addressed by the technique of stochastic simulation analysis. It indicates that a funded scheme would in principle be viable. In the case of age-cohort related taxes, tax contributions ranging from 1 per cent of income for those aged 20-30 up to 3 per cent for those over 60 would be required. In the case of a basic-rate income tax increase applied without reference to age, the rate would have to be 1 ½ per cent. If investment returns of 4 ½ per cent are achieved, which is consistent with historical experience, the postulated spending gap could be fully bridged and the fund could grow to over £3 billion in the 2030s. Depending on longer run population trends and demands for care, as well as investment returns, the fund could be sustainable indefinitely and help to meet care costs in the further future, perhaps with no requirement for further tax increases.

A PAYG (pay as you go) scheme has the big advantage that it could start with lower tax rates, one half or one per cent, for example, but rates would have to increase after about five years and eventually, after 20 years would probably exceed tax rates in the funded scheme – meaning the currently-young would pay more over their working lives.

Total contributions, in either case, would be capped, e.g. by applying those increases to basic-rate income tax only. The cap is reasonable because otherwise many people would pay in more than they could ever hope to get back even in the worst case where they required lengthy and extensive social care. The scheme will necessarily be redistributive, being mainly of benefit to people with low incomes and modest wealth. Yet the intention is also to pool a risk across society so that those unfortunate enough to require expensive care are helped with the burden. Given a cap on contributions, everyone should have the possibility of benefitting.

Conclusion

A reasonably moderate tax on incomes or increase in basic income tax could provide the funding required to alleviate social care concerns for the elderly. A system of hypothecation could improve public acceptability, which would be further improved if the scheme were contributory. Whether a contributory scheme is advisable depends on the practicality and the cost of administration. In the interests of inter-generational fairness, there is also a strong argument for making tax contributions depend on age cohort as well as income. Stochastic simulation analysis suggests that Wales has the option of a funded scheme in which tax rates are smoothed – higher initially and lower later – in order to build up a fund that would be invested to help meet future care needs. The funded approach makes it easier to manage fairness among the age cohorts as well as providing a fund that can be invested in Wales to a limited extent. It is subject to investment risk, however, and must overcome the political disadvantage of requiring higher tax rates initially.

I.   The current and prospective problem

The current situation

1.1   This chapter looks to gauge the extent of future demand for publicly supported care services for the elderly in Wales. The purpose is not to make detailed or definitive projections of necessary spending, which would depend on policy decisions and technical developments in the area of care. Rather, the chapter makes a provisional attempt to establish broad orders of magnitude of future demand. In considering the best way to raise revenue, it is necessary to have an idea of how much revenue is likely to be needed.

1.2   Local authorities in Wales currently pay over £550 million each year for social care of the elderly[1]. There are reasons to believe that this sum is inadequate to meet current demand while providing services of the required quality. Moreover, demand is certain to increase owing to demographic trends, entailing a growth in the numbers and the proportion of elderly people in the population.

1.3   Local authorities provide or arrange social care services for people who do not pay for them privately and generally the councils charge for those services. The spending figure cited above is a net figure after receipt of fees and charges. Health and social care services are separate administratively and financially, with the NHS providing most health services largely free of charge. The Welsh Government is currently seeking to integrate the services better in the interests of efficiency.

1.4   Under current legislation, local authorities in Wales may charge service users for *residential care*, subject to an assessment of income and capital, including property. They may charge too for *non-residential care services*, also subject to a means test[2].

1.5   Local authorities may provide non-residential social care services directly or commission them from private or third sector providers. Currently, there is a maximum weekly charge for non-residential care services of £80 that is projected to increase to £100 by the end of the current Assembly term in 2021. People receiving services are entitled to retain a minimum income. A capital limit of £24,000 also applies; below that, receivers of non-residential care are not expected to contribute to the costs from their capital.

1.6   People in permanent residential care arranged by their local authority must contribute towards the cost from their income, including their pension, and from their assets. Anyone with capital above £40,000, as of 2018-19, including the value of any property, is expected to meet the full costs of their care until their capital falls below this threshold. It may be necessary to sell property to pay care home fees, although deferred payment arrangements are available which allow property to be retained until the owner dies. The capital threshold is set to rise to £50,000 by 2021. Regardless of the contribution an individual makes to the cost of their care, all care home residents are entitled to

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[1] https://statswales.gov.wales/Catalogue/Health-and-Social-Care/Social-Services/Adult-Services/Service-Provision/adultsreceivingservices-by-localauthority-clientcategory-agegroup
[2] See Stephen Boyce "Paying for adult social care in Wales: Debate and Reform", National Assembly for Wales Research Service, May 2017.

retain a minimum income amount, currently £28.50 per week. All of these policies and allowances are evidently subject to change in a way that would influence effective demand.

1.7   In England people with savings above £23,250 must pay for their own care. For residential care, their home is included among their assets when assessing wealth[3]. Following the Social Care Act of 2014, the UK Government has set out plans to introduce in England a cap of £72,000 for expenditure on residential and non-residential care (excluding daily living costs) and an increase in the capital threshold, above which the full costs of care would need to be met, to £118,000 for people with property and £27,000 for those without property. Implementation of these was put back to April 2020. In the manifesto for the 2017 election, however, the Conservatives replaced those proposals and announced they would introduce a capital threshold of £100,000, including the principal residence for all sorts of care[4]. In December 2017, the government abandoned the 2020 date for introducing a cap but re-iterated the commitment to have one and promised a Green Paper for the summer of this year, which has yet to appear. The future direction of care policy remains unclear at the time of writing[5].

1.8   In any event, changes are probable which could entail extra public expenditure. That extra public spending should then be reflected in an increased budgetary allocation to Wales under the Barnett formula. Current British practice means that the increased funds would not be tied or hypothecated and the Welsh Government would be free to use them in the same way it proposed to use any revenue it might raise from higher taxes. Moreover Barnett allocations are not affected by tax changes in devolved administrations. If the Welsh Government were satisfied with UK policy changes it could rescind any tax increases it planned to finance social care and use instead the increased budgetary allocation. On the other hand, if it thought the measures inadequate it would still have the option of raising taxes to supplement resources. It would be in a similar situation to the present one; the size of the funding "gap" would be different but it would face the same issues. In calculating future revenue sources for care, no specific assumption is made about the UK government providing additional resource, although the assumptions made about the growth of the Welsh budget imply faster growth than in the recent past.

Projecting the demand for care services

1.9   In projecting the demand for social care in Wales, we consider two elements:

- any current shortfall in expenditure below that needed to fully meet demand with care of the appropriate standard;

- an increase in demand owing to population ageing.

In recent years public spending on social care for the elderly has increased in nominal terms but deflated to constant prices it has seen a decline, falling some 5 per cent between 2007-8 and 20016-

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[3] For full details: "Social care: paying for care home places and domiciliary care (England)" House of Commons Library, Briefing Paper 1911, November 2017.
[4] The Conservative and Unionist Party Manifesto 2017 – Forward Together...May 2017, p.65
[5] House of Commons Library, Briefing Paper 8002, March 2018

17[6]. There are consistent data on the number of older people receiving care up to 2014-15 when there was a break in the series. Between 2007-8 and 2014-15 the numbers receiving care were broadly stable and spending per head on those in receipt of care was also nearly stable, falling and then rising (see Fig 1).

1.10 The proportion of elderly people in each age group who receive care has declined substantially, however, over the same period. The number over 65 rose by 16 per cent but the proportion receiving care dipped from 14.9 per cent to 12.9 per cent. There is no strong evidence of declining disability rates among the elderly so this decline in those receiving care could be a consequence of stricter assessments being applied to decide whether people are in need of support for social care. If assessments are inappropriately stringent that implies unmet demand for social care.

1.11 The group, Wales Public Services 2025, at Cardiff University commented in February 2018:

"That total spending on older adult services declined over the recent period may seem anomalous, particularly given the presumed demand pressures that accompany an ageing population."

They concluded:

".. the new statutory framework brought about by the Social Services Well-being (Wales) Act 2014 (effective April 2016... afford(s) councils a significant amount of discretion in determining whether an individual's care needs are eligible for local authority support … As a result of this flexibility, analysing both historic and future patterns of demand may be complicated by changes in what constitutes 'effective demand' (i.e. the number of pension age adults seeking local authority support that are also deemed eligible).

"Data available for the period 2009-10 to 2015-16 show that the total number of older adults supported by one or more kinds of local authority organised care services declined by 14.1 per cent, or 2.6 percentage points as proportion of the older adult population. One explanation may be a trend towards tightening local care package eligibility criteria"[7].

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[6] Total spending on social care, people aged 65 and older : https://statswales.gov.wales/Catalogue/Local-Government/Finance/Revenue/Social-Services/social-services-socialservicesrevenueexpenditure-by-clientgroup

[7] J.Ogle "The Cost of Caring for an Ageing Population". Submission by Wales Public Service 2025 to Assembly for Wales consultation, February 2018

Fig 1: Elderly people receiving care and real spending per head

Real spending per capita

— over-65s receiving care
— spending per 10 people*

*spending per head times ten at constant consumer (2014-15) prices

source: StatsWales
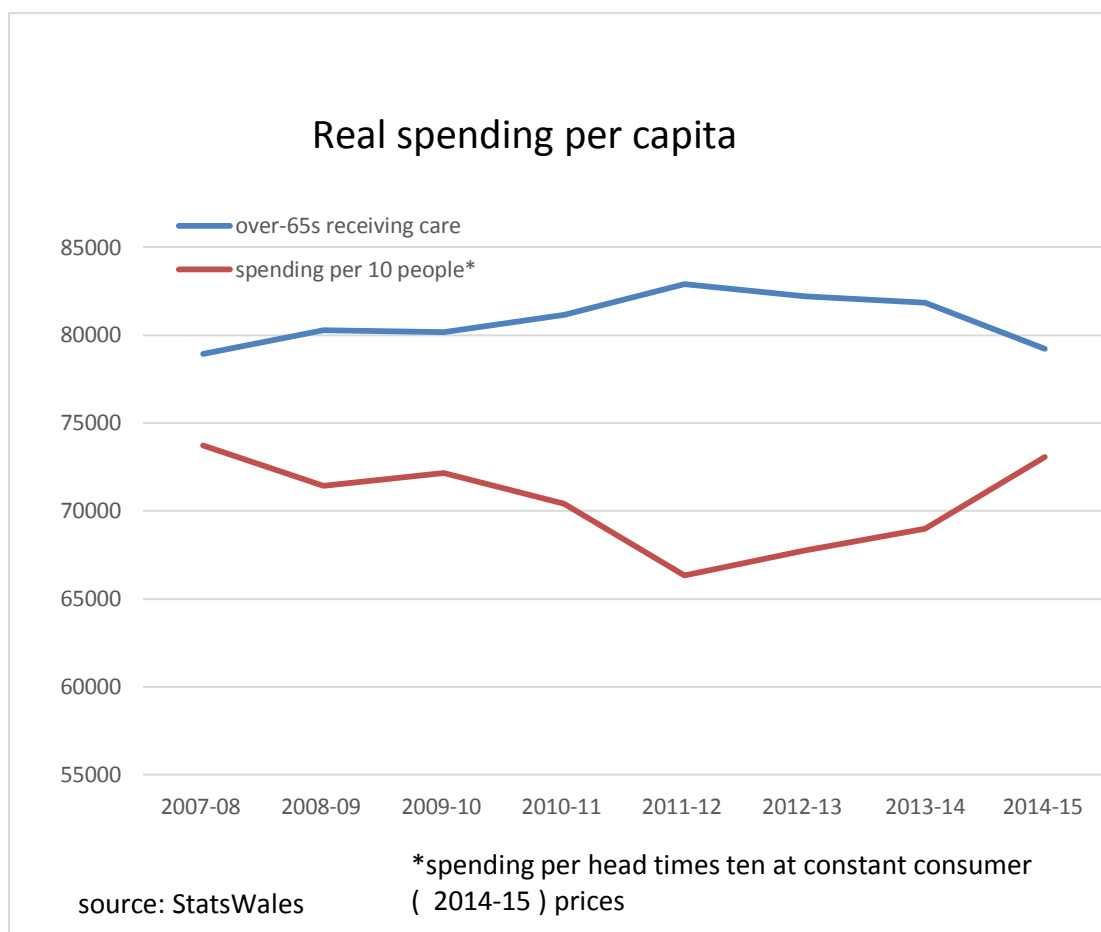
1.12   Extending the analysis to 2016-17, the population over 65 increased by 20 per cent between 2007-8 and 2016-17 while expenditure in real terms declined by 5 per cent. Real expenditure in relation to the population over 65 in 2016-17 was therefore 26 per cent below its level in 2007-8, representing a fall of almost 21 per cent.

Table 1: Changes in older adult social care spending, 2007-8 to 2016-17 (2016-17 prices)

	LA spending (2016-17 prices)		Percentage change
	2007-8	2016-17	
All-Wales			
Older adult (≥65) social care (£m)	581.8	551.7	- 5.2
Per capita (£)	1,098	869	-20.8
Source: StatsWales : population over 65 and LA expenditure outturns;	ONS: CPI ex housing costs;	plus author's calculations	

1.13   The decrease in real spending has gone along with a reduction in capacity in the care home sector. The number of adult care homes in Wales fell by over 8 per cent between 2011 and 2017 and the number of places available in care homes went down by 4.8 per cent. The pressures are not specific to Wales. While care home places have grown overall, the Competition and Markets Authority reported in 2016 that "short-term funding pressures and uncertainty mean that the sector is not attracting investment" and Channel 5 News reported in 2017 that 59 per cent of councils reported closures the previous year.[8]

Fig 2: Places in care homes for the Elderly.
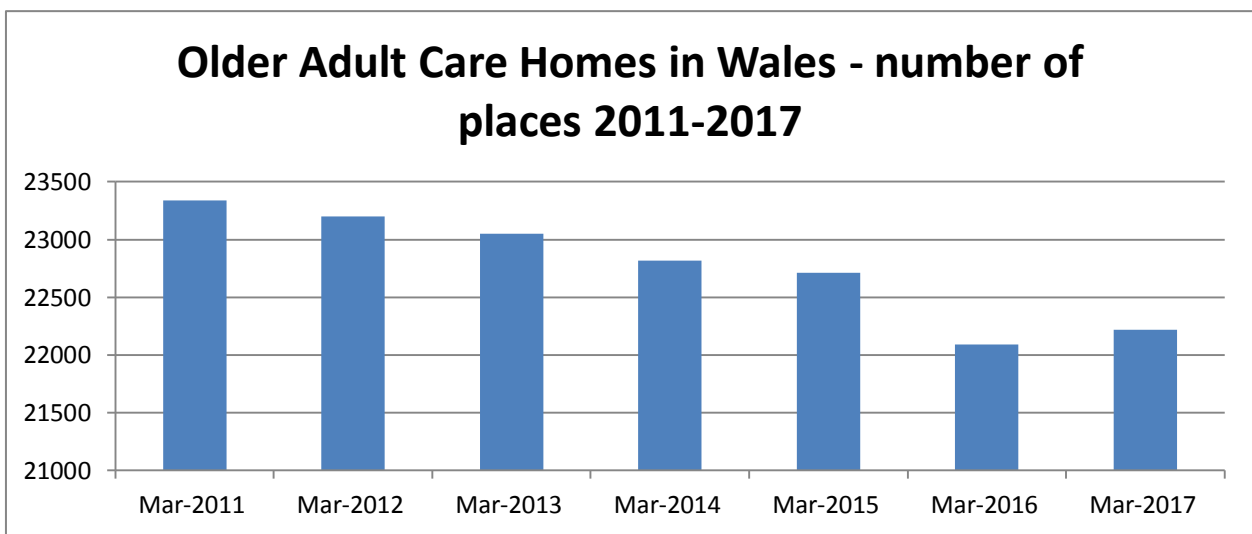
Source: Registration and regulatory business system, Care and Social Services Inspectorate Wales

1.14   These numbers provide some support to concerns that the way local authority tariffs for residential and non-residential care have evolved as a consequence of austerity in local government budgets has put pressure on the financial viability of some care homes.

1.15   It is not possible to say how far the reduction of 20 per cent in the relation between spending and the size of the relevant population is an indicator of unmet demand. It is certainly possible that efficiencies in care provision, better targeting of the needy or improved health of the age cohorts in question have played a role. On the other hand, there are reasons to believe that the cost of meeting demand will rise in future faster than general price or wage inflation as a whole. Care workers are generally poorly paid and the introduction of living wages will inflate costs substantially

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[8] Daily Telegraph News, 4th October 2017: "Nine in ten areas to have a shortage of care home places within five years".

(while arguably being necessary to ensuring adequate care). Brexit could remove or reduce a source of cheap but skilled or experienced labour for the sector[9].

1.16   There is an old joke in economic forecasting that two effects of uncertain magnitude but opposite sign cancel out. In that spirit, while acknowledging that 20 per cent is surely too high as an estimate of suppressed demand we suppose that any exaggeration offsets the extra cost inflation that is to be expected. Consequently, an increase in spending per head of 20 per cent may be a fair estimate of what is required to, meet unusual cost inflation and provide public policy with some latitude in deciding how far to improve care standards or how far to improve the terms of means tests. Evidently, though, identifying requirements accurately in detail requires another study.

1.17   Increased spending on social care could result in economies in other public spending. Absence of adequate social care provision not only leads to distress in itself but often shows up as pressure on the health service. Elderly people with chronic conditions end up in hospital and stay there because there is nowhere where they can be safely discharged. That creates a shortage of available beds triggering problems elsewhere in the health system. An increase in per capita care spending on the scale indicated could well result, therefore, in a smaller increase in public spending as a whole.

Demographics

1.18   The proportion of elderly people in the population is set to rise at least to the early 2040s (Fig 3). Historically, old age was thought to start at 65 but demand for care rises more steeply at more advanced ages and the official retirement age is due to rise to 67. The proportion of those over 70 relative to those of working age is projected to rise from a current 23 per cent to some 37 per cent by 2042. The number of people over 70 is projected to increase by 55 per cent by 2040, rising from some 437,000 to 679,000.[10]

1.19   In drawing out the consequences for spending on social care, we need to consider two elements. The first is the expected disability rate of different groups; the second is the growth of different age groups within the over-65 group as a whole. For the former we draw on a Lancet study by Guzman-Castillo and others who forecast disability rates from 2015 to 2025 for the UK as a whole[11]. Essentially the disability rates for each age group were projected to be stable over the period. In this study it is assumed that the rates will remain unchanged to the 2040s and that they are similar for Wales and the UK as a whole.

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[9] See: Toby Watt and Adam Robert "The path to sustainability" funding projections for the NHS in Wales to 2019/20 and 2030/31; The Health Foundation Oct 2016. Some 6 per cent of NHS employees in Wales are EU migrants

[10]**Population by age group**: https://statswales.gov.wales/Catalogue/Population-and-Migration/Population/Estimates/nationallevelpopulationestimates-by-year-age-ukcountry

[11] "Forecasted trends in disability and life expectancy in England and Wales up to 2025: a modelling study" Maria Guzman-Castillo, Sara Ahmadi-Abhari, Piotr Bandosz, Simon Capewell, Andrew Steptoe, Archana Singh-Manoux, Mika Kivimaki, Martin J Shipley, Eric J Brunner, Martin O'Flaherty. The Lancet July 2017. The study defines disability largely by those who have either cardio-vascular disease or some form of dementia

Fig 3: Age ratio

Age ratio
population 70 and over divided by population aged 20-69

Source: StatsWales, author's calculations
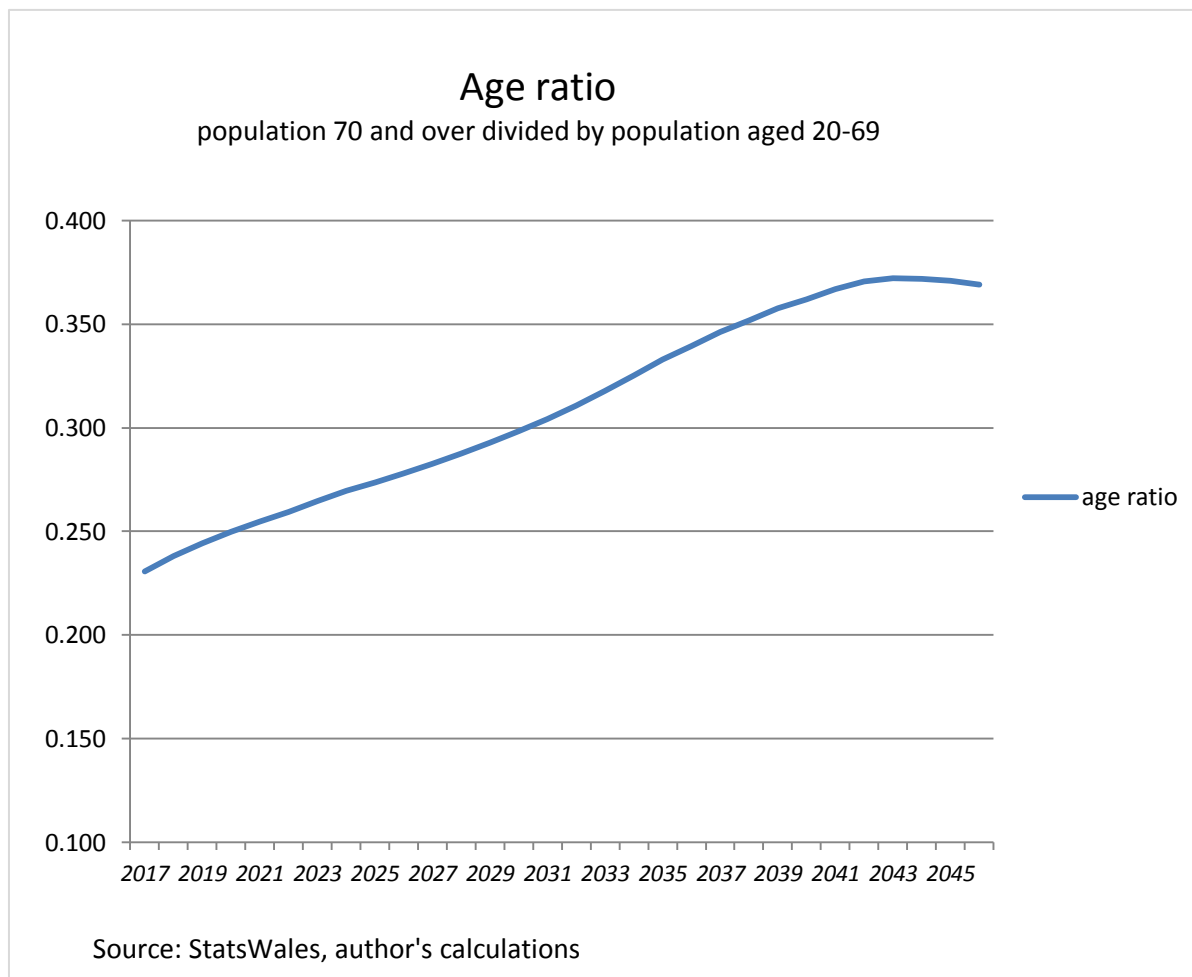
1.20   Comparing the projected disability rates for 2016-17 with the number of elderly people receiving care, we observe that 35 per cent of the age group 65-74 with disabilities are receiving care; 77 per cent of the age group 75-84 with disabilities are receiving care. More than all of those with disabilities over 85 are receiving care; in that case care receivers were 65 per cent of the total age cohort. In projecting care demand, it is assumed these proportions are stable.

Table 2: Projected disability rates by age group

age	rate
65-69	0.14
70-74	0.19
75-79	0.22
80-84	0.26
85-89	0.29
90 and over	0.57

Source: Guzman-Castillo et al; author's interpolations

Fig 4: changes in population share of older age cohorts
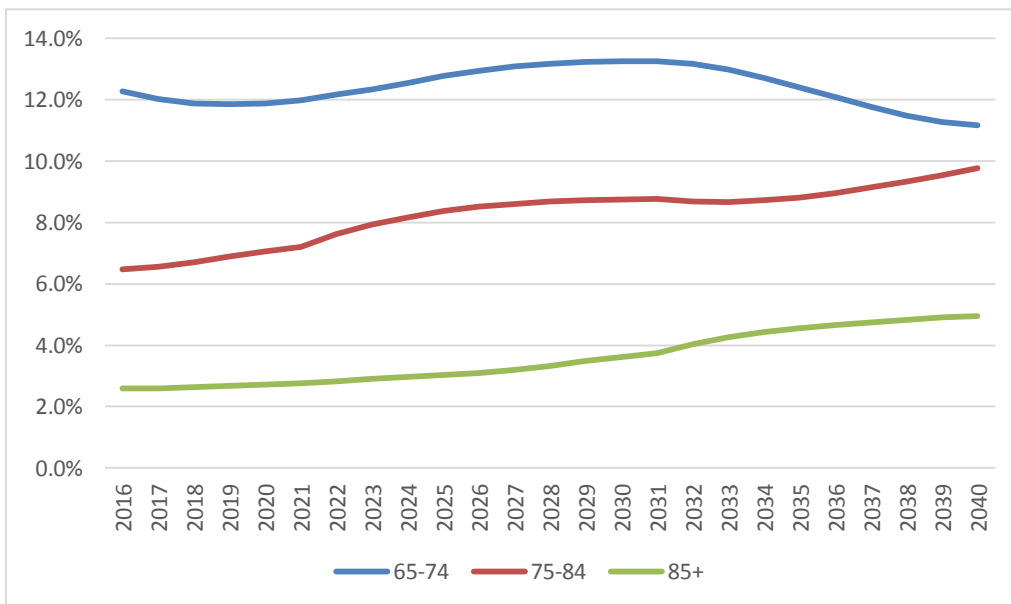
Source: StatsWales, author's calculations

1.21   On the assumptions about rates of disability and care uptake and taking account of the population projections by age cohort, those receiving care will rise from 111,577 in 2016-17 to some 134,000 in 2025, 152,000 in 2030, 175,000 in 2035 and 188,000 in 2040 – rises of 20 per cent, 36 per cent, 56 per cent and 68 per cent respectively. Additionally, an increase of 20 per cent target spending per head, on top of the increases implied by demographic trends, is assumed to be phased in over the period 2020-2025. Expenditure projections are at 2016-17 prices and take no specific account of inflation. Apart from exceptional rises, allowed for in the 20 per cent uplift in spending per head, it is assumed that care cost inflation runs at the same rate as wages in the economy. Since wages will provide the revenue base for any Welsh Government levy to pay for increases in social care, calculations are conducted at constant prices, assuming costs and revenues are subject to the same

inflation rate, which can therefore be ignored. Evidently, different assumptions are possible; care costs could rise slower or faster than the tax base. The increases in expenditure implied by current assumptions are shown in Table 3.

Table 3: Projected increase in expenditure demand

	percent increase from 2017
2017	-
2020	6.2
2025	44.0
2030	63.2
2035	87.1
2040	101.6

Source: author's calculations

1.22   Some of that increase would be met by the natural expansion of the Welsh budget as the UK economy grows. Future growth rates are of course uncertain. The trend growth of the British economy over past decades has been around 2 ¼ per cent but there has been a slowing of productivity growth since 2007 and it is widely supposed that growth in future might be slower. We assume that the part of the general budget devoted to adult care will grow 1 ½ per cent faster than wages and, therefore, care costs. The UK Treasury assumes that UK income growth will average 2 per cent over the long run[12]. If the proportion of the Welsh budget devoted to adult care is constant, our projections would imply some reversal of UK austerity and a government budget rising at a real 3 ½ per cent. Alternatively, our assumptions could imply some switch of the general budget with more resources for adult social care to keep that part of the budget growing at 3 ½ per cent. These are fairly sanguine assumptions that mean we may understate the size of the gap that our new revenue source has to bridge.

1.23   If spending on social care for the elderly grows in line with those assumptions, that spending from the budget would be up in 2025 by 12.6 per cent, in 2030 by 21.4 per cent and in 2040 by 40.8 per cent above care costs. On those assumptions we can calculate the gap between the growth of expenditure needed to meet the demand for care and the growth of government resources. Table 4 shows the gap with some sensitivity analysis. The first column shows the pure effect of demographic change with no assumed increase in expenditure per head. The second column shows the effect of raising spending per head by 10 per cent by 2025. The third column shows the result of the 20 per cent increase in spending per head. The gap is greatly affected by the rise in per capita expenditure because of a gearing effect. At a 10 per cent rise in spending per head, the regular budget is projected to meet 76 per cent of the total spending on social care; at a 20 per cent rise in spending per head the budget contribution would be below 70 per cent.

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[12] (see HM Treasury Green Book Annex 6:
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/685903/The_Green_Book.pdf)

1.24 Evidently these projections are based on a host of other assumptions any of which could turn out to be wrong. Results produced by the other analysts already cited reflect the uncertainties because projections differ widely. These results fall within that wide range.

Table 4: Expenditure demand gap

(£ million*)			
Increase p.c.	+ 0 pct	+10pct	+20pct
2020	9	9	9
2021	12	23	34
2022	20	44	67
2023	28	65	101
2024	34	86	137
2025	40	107	173
2026	44	112	180
2027	52	121	191
2028	61	133	204
2029	72	145	218
2030	80	156	231
2031	88	165	241
2032	107	187	267
2033	121	204	286
2034	131	216	300
2035	138	224	310
2036	142	230	318
2037	145	235	324
2038	148	239	329
2039	149	242	334
2040	148	243	338
*constant 2016-17 prices			

Source: author's calculations

1.25 With the 20 per cent rise in spending per head, for example, the implied annual growth of necessary expenditure to 2030 is some 3.8 per cent and to 2035 is 3.5 per cent. That is comparable with the 4.1 per cent real required annual increase for all adult care projected by the Health Foundation in 2016, referenced below. In principle expenditure on care for the elderly should rise faster than that on children and other adults since those groups are expected to be a more stable share of the population. The Health Foundation projections of spending requirements on the elderly are therefore implicitly substantially higher than those in this paper. They stated:

"In 2014/15, Wales spent £1.2bn on personal social services, excluding family and children's services. This is worth around £397 per head of population, higher than in England (£290). This partly reflects estimates of higher needs in Wales, as well as the

government's decision not to ring-fence the health care budget in 2011/12 in order to protect other areas of public spending.

"We estimate that pressures on social care will rise by around 4.1% a year between 2015 and 2030/31, due to demography, chronic conditions and rising costs. This will require the budget to almost double to £2.3bn by 2030/31 to match demand. This rate of growth is higher than expected for the NHS, as social care services are heavily concentrated on the most elderly (a group that is seeing the fastest population growth)… Unless funding for adult social care rises at the same rate as pressures, or there is a dramatic change in the rate of efficiency growth for social care services, there is a risk that the level of unmet need in Wales would rise. There is a strong link between spending on social care and the NHS so any increase in unmet need for social care would be likely to lead to a rise in demand for NHS services."[13]

1.26   This paper is concerned only with social care for the elderly, where the numbers are roughly half the totals cited by the Health Foundation. The increase in 2030-31 over 2016-17 is projected to be some 65 per cent or £360 million and the consequent funding gap some £235 million.

1.27   On the other hand, these results are above the projections of need by the group Wales Public Services 2025 (WPS2025), who stated:

"In previous work, we also showed that simply uprating older adult social care expenditure at the local government level by the expected growth in the adult population aged 65 and over would see expenditure rise by 24 per cent in 2020-21 relative to 2015-16 if spending per head on older adult social care were returned to pre-austerity levels in 2009-10. If we take 2016-17 as our base year, maintaining this level of spending (£890 per older adult) over the next decade would require an 18.0 per cent (£101m) rise in net current expenditure by 2026-27, or a 27.2 per cent (£154m) rise by 2030-31"[14].

1.28   By comparison, the corresponding projections in this paper imply a spending increase of 47 per cent from 2016-17 to 2026-7 and of 67 per cent by 2030-1. The corresponding cash increases are £260 million and £350 million respectively. Part of the difference is because WPS2025 take a different base year in calculating the fall in spending per head of the elderly population and they project a restoration of 14 per cent compared with the 20 per cent uplift in this study. That does not explain the full difference in results but given the provisional nature of this exercise we have not conducted a detailed analysis of other differences. There is some comfort in the fact that these results fall within the wide bracket defined by those other analysts. We discuss in qualitative terms how to finance the gap in subsequent chapters. In the final chapter we undertake quantitative analysis on closing the gap.

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[13] Quoted from Toby Watt and Adam Robert op.cit.
[14] Ogle op cit

II. New financing for care: characteristics of a viable scheme

2.1 Chapter One has demonstrated that some additional source of finance is required for public spending on social care in Wales. Given the probable growth of demand for care services and the probable growth of the Welsh Government budget, the demand for support cannot be met from a constant proportion of the budget. A gap is occurring that is likely to grow for at least two decades. A levy on Welsh residents could provide resources that meant that gap could be closed; everyone could then be promised adequate social care in old age.

2.2 A recent study by Demos, using a survey of 2000 people across the UK and focus groups, found that a majority of people thought that old age care should be provided through a combination of personal responsibility and state support. In Wales there was stronger support for the notion of personal responsibility than in other parts of the UK and little support for the state taking sole responsibility.[15] That translates into a readiness to pay moderate increases in tax so care is available to people who need it, subject to means tests, but with lesser willingness to pay significant tax increases to make care free to everyone[16]. Unfortunately, the study found these attitudes are not consistent with people's behaviour. Despite accepting personal responsibility, most people are not saving enough to make provision for social care and owner-occupiers are reluctant to see their home considered as part of their wealth for means tests[17]. A moderate levy seems in line with current attitudes while bringing behaviour in line with realities.

2.3 The options of the Welsh Government in raising such a levy are limited. Relatively few taxes are currently devolved from the UK level. The only prospective devolved tax base of adequate size is income from employment and self-employment. Taxation of property is devolved and is exercised through council tax, which brings in a significant £1.5 billion annually. A tax on property or land could be seen as a substitute for a wealth tax. There are two substantial difficulties in attempting to use such taxes for social care. First valuation is a recurring difficulty, Welsh houses are currently valued as of 2003 and no valuation has been carried out since 2005. Valuation of land alone has never been carried out. Other forms of wealth are too easily hidden or put outside the tax jurisdiction to be easily taxable, even if the right to tax them were devolved. Secondly property taxes are very unpopular – unreasonably so as the Mirrlees Commission pointed out[18]. The fact remains that people are readier to accept a tax associated with a transaction, such as a purchase or the receipt of income. Tax demands that arrive without a cash exchange but associated with property are seen as more of an imposition and complaints are made routinely that in not being related to income they are unrelated to the ability to pay. The cost and political difficulty in raising a social care levy from taxes on property wealth seem prohibitive. Therefore this study focuses on a levy on income.

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[15] Wood, Claudia and Vibert Simone "A good retirement" Demos, December 2017. See pp 31-32
[16] Wood and Vibert *op.cit*. p 45,chart 16
[17] Op.cit, pp 27-29 and p.38.
[18] Tax by Design, Tnstitute of Fiscal Studies p.383;https://www.ifs.org.uk/uploads/mirrleesreview/design/ch16.pdf

2.4   What should be the relation between the levy and the promise of support for care in old age with its associated means tests? This study considers four key questions:

- Should any tax or levy on incomes be hypothecated to social care rather than being part of general revenue?
- How can the system ensure fairness to people on different incomes, and how can it ensure intergenerational fairness so all age cohorts get a comparable deal?
- Should tax payments for social care be part of a contributory scheme where a record of payments is necessary to enjoy some of the benefits?
- Would the scheme work better on the pay-as-you-go principle whereby revenues go immediately to support care or should it be funded, whereby revenues go into a fund that is invested to meet future care needs?

2.5   This report assumes the answers to these three questions should depend on five criteria[19]:

- Effectiveness: which approach is most likely to raise the necessary resources
- Public acceptability: what sort of scheme would the public be most likely to consent to and the least likely to reject
- Fairness: which approach would be most equitable; this of course is related to public acceptability
- Compatibility with Wales' position in a broader fiscal union
- Cost of collection and administration

As we have argued above, the effectiveness criterion restricts us to looking at taxes on income from employment and self-employment. We deal with the first three questions in this chapter and postpone the fourth question to chapter three.

A. Hypothecation

2.6   People like to know where their taxes are going and to feel that they will derive the benefit of their payments. A number of opinion polls in the press have suggested that there is support in the UK as a whole for dedicated taxes to finance the health service, for example. The Kings Fund recently found that 61 per cent of respondents to a survey support tax rises to increase NHS funding, an increase of 21 percentage points from 2014 and 12 percentage points from 2016. Of the 61 per cent, 35 per cent supported a separate tax that would go direct to the NHS and 26 per cent would be happy to pay more through their existing taxes. [20].

2.7   There are arguments for and against hypothecation but it is important to note that there are two forms of the concept. Strong hypothecation is when a tax is used for one purpose or public service

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[19] These criteria are consistent with the tax policy principles set out by the Welsh Government:
http://gov.wales/funding/fiscal-reform/tax-policy-framework/?lang=en
[20] Harry Evans, "Does the public see tax rises as the answer to NHS funding pressures", The Kings Fund, April 2018. Also see: D Campbell, 'Half of voters happy to pay more tax to fund NHS – poll', Observer, 15 August 2014, available: www.theguardian.com/ society/2014/aug/15/voters-tax-fund-nhs-poll accessed: 19/12/2014

only and, furthermore, it is the only source of finance for that service. Weak hypothecation covers three other cases:

1. where surplus revenue from a tax can be spent elsewhere but there is no other revenue source for the service in question;
2. where all the hypothecated tax must be spent on the service but other revenue is used for it too;
3. where surplus tax may be spent elsewhere and other revenue is also available for the service.

Most of the advantages and disadvantages of hypothecation apply to the strong form. Given weak hypothecation, the public cannot be sure that all of any levy is really leading to an increment in spending on social care because the government can always alter the amount it spends on social care from its general budget to offset the effects of the levy. That fact removes many of the benefits claimed for hypothecation but it also reduces the budgetary inflexibility that is a downside of hypothecation[21].

2.8   To achieve strong hypothecation, the levy would have to become the only source of support for social care. That means it would have not only to plug the expected gap between demand and Welsh Government's current budgetary resources it would have to completely replace those resources. The levy would have to cover the £550 million annually that is currently spent by local authorities on social care for the elderly as well as meeting the growth in demand[22]. If it did so, of course, the Welsh Government, would have a spare £550 million in its budget. To avoid a steep rise in the tax burden it could reduce basic income tax by an appropriate amount, somewhere near 3p. Wales would be left with a substantial new levy strongly hypothecated to social care and reduced rate of income tax. Any future variations in spending on social care would then entail changes in the hypothecated levy and would not affect the rest of the budget.

2.9   If the evidence is that hypothecation would increase the public acceptability of a levy, we could still ask whether strong hypothecation is necessary or whether the public would be content with weak hypothecation – the second of the three types set out above - despite its element of uncertainty. If so, that would permit using the levy simply to plug the gap that is expected to grow between demand and budget resources. It would be clearly supplementary and could be set at a much lower level, perhaps half the rate, of the strong hypothecation case, though then there could be no income tax cut. It would be a less radical intervention in the tax system.

2.10   A weak form of hypothecation could still increase public acceptability, if it was introduced in conjunction with institutions that demonstrably ring-fenced the revenue, and in conjunction with a clear statement by government about what improvements in social care would be implemented in consequence of the levy. The point is that current resources are so inadequate to the prospective demand for social care that if the government set out objectives and met them, the public could be confident that additional resources were indeed going for their declared purpose without diversion. An unscientific demonstration of possible public opinion was provided by an online poll on the Wales Online website in May 2017. After an article by this author and Tegid Roberts proposing a

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[21] For a discussion including those points see India Keable-Elliott "Hypothecated taxation and the NHS" http://www.centreforum.org/assets/pubs/hypothecated-taxation.pdf
[22] If the tax covered all social care, not just for the elderly, it would have to be still bigger.

supplement to national insurance to pay for care, readers were asked whether they approved of such a scheme and would be ready to contribute. In a response, estimated to be several hundred "clicks," over 75 percent said yes[23].

2.11 A clear difference between the two forms of hypothecation is in their effect in creating a divergence between policy measures in the UK and in Wales. As noted, the UK faces similar problems to Wales in funding social care given demographic ageing. Policy changes that permit increased expenditure would be reflected via the Barnett formula in the Welsh block grant. At present the Welsh Government could allow some or all of the increase to flow through to social care in Wales. It could continue to do so with an "supplementary" social levy which was weakly hypothecated to social care. With strong hypothecation it could not do so; the money would have to be spent on other things or on tax cuts. The levy alone would finance social care in all circumstances. Strong hypothecation would create a marked difference between the Welsh tax system and that in the rest of the UK. It would arguably reduce flexibility in responding to policy initiatives in the rest of the UK. It may be that that sacrifice of flexibility is more than Welsh politicians wish to make. While there is no clear distinction between the two cases in terms of the first three of our choice criteria, flexibility in responding to changing UK circumstances might favour weak hypothecation.

2.12 Weak hypothecation could also be achieved with an increase to an existing tax, for example income tax. That would be likely to be considerably less expensive than establishing a wholly new tax. For those reasons this study tentatively proceeds on the assumption that a supplementary levy, implying weak hypothecation, is the more likely path to choose.

2.13 Apart from a loss of budgetary flexibility, hypothecation has operational consequences. Tax receipts which must be spent in a certain way have to be maintained in balance with expenditure on the function or purpose in question. For that reason, the national insurance (NI) system was set up with a buffer fund. When receipts and payments do not match, the fund takes up the slack and grows or shrinks. Note that the existence of such a fund does not mean the system is "funded" in the sense that the fund meets outgoings. The NI system is classified as Pay As You Go because nearly all its outgoings are met from that year's contributions. If the Welsh Government announced that a new tax or supplement to income tax would be hypothecated to social care, even with a PAYG system it would have to maintain such a buffer fund, at least notionally. That is not only because of the uncertainty of revenues but also because of the granularity of taxes. It would hardly be practical to raise income tax, for example, by less than a halfpenny in the pound or half of one percent, which would yield some £100 million. Yet an immediate increase in spending on social care of 20 per cent would be difficult to achieve without waste. It would take some time for additional outgoings to reach £100 million during which time the buffer fund would grow. As additional spending rose above £100 million with population ageing, the fund would shrink until, under a PAYG system, tax rates would need to be increased.

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[23] Seen by the author but no longer accessible online. The estimate of number of clicks was provided by an employee of Trinity Mirror, the publishers. The Welsh Government's 'Do Poll' on new taxes found only minority support for a social care levy, in a context where hypothecation was not discussed.
http://gov.wales/docs/caecd/publications/180213-new-tax-ideas-poll-en.pdf.

2.14   This is only the sort of cash management that governments, including local governments, routinely carry out and which the Welsh Government will have to do now that it has its own tax revenues. Hypothecation means that it would be necessary to manage more than one notional cash pot. Even if all the money is in the same bank account it has to be accounted for as belonging in separate funds.

B. Fairness

Individual contributions

2.15   Support for a levy is more likely if the scale of individual contributions is seen to be fair. There is plenty of evidence that the public relates fairness to ability to pay. It would generally be regarded as fair if contributions were related to income. As with any insurance system, benefits are largely a matter of chance. If someone remains healthy and independent until death they will not draw on social care benefits, however much they have contributed. Most people would regard someone with that fate as fortunate rather than unfortunate. It is good to be insured and better never to have to draw on the insurance.

2.16   As a practical matter income related contributions are also to be preferred on the first of our criteria – effectiveness. If contributions were at a flat rate that the least well off could afford the revenue to be collected would not be adequate to make a substantial contribution to the funding gap outlined in chapter one. For that reason alone it seems clear contributions should be earnings related.

2.17   Ensuring equity, however, has two dimensions: personal or horizontal equity, fairness across people at any time and intergenerational equity, that is fairness between different age cohorts.

Across generations

2.18   In a collective scheme intergenerational fairness requires either that the rate of a levy be related to age cohort or that social care benefits should be arranged to rise over time. This might be less important if in other respects the life chances of young and old were similar. However as the Institute for Fiscal Studies has documented the life chances and the wealth of younger people in the UK have deteriorated relative to their elders in recent decades[24]. There is no reason to think the Welsh situation is substantially different.

2.19   The IFS reported in 2016 that:

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[24] Jonathan Cribb Andrew Hood Robert Joyce, "The Economic Circumstances of Different Generations: The Latest Picture" Institute of Fiscal Studies, 2016. These findings have been reiterated by the report by the Resolution Foundation's Intergenerational Commission: "Repairing Britain's Generational Divide", May 2018.

- Those born after 1960 now have no higher incomes than their predecessors born 10 years earlier did at the same age. This is the result of the stagnation of working-age incomes over the past decade – real median income for those aged 25 to 55 grew by only 2% in total between 2004–05 and 2014–15, compared with 26% between 1994–95 and 2004– 05. (There has been little improvement subsequently).

- So far, the early 1980s cohort has accumulated significantly less wealth than its predecessors had by the same age. By their early 30s, those born in the early 1980s had average (median) net household wealth of £27,000 per adult – including housing, financial and private pension wealth. This is about half of the average wealth holdings of the 1970s cohort at around the same age (£53,000).

- Those born in the early 1980s have much lower homeownership rates in early adulthood than any other post-war cohort. At the age of 30, 40% of those born in the early 1980s were owner-occupiers, compared with 55% of the 1940s and 1970s cohorts, and more than 60% of the 1950s and 1960s cohorts. The last cohort to have a similar homeownership rate to those born in the early 1980s at the same age was the 1930s cohort.

- Outside the public sector, those born since 1970 have much less access to defined benefit (DB) pension schemes than their predecessors did at the same age. In their early 30s, less than 10% of private sector employees born in the early 1980s were active members of a DB scheme, compared with more than 15% of those born in the 1970s and nearly 40% of those born in the 1960s. The decline of DB schemes represents a shift of risk on to employees and was associated with a large reduction in the generosity of employer contributions.

2.20 It is no wonder then that the Demos study, cited earlier, in a survey conducted in mid-2017 found a marked difference in the generations when it came to how hopeful they were about their prospects for financial security in retirement. This is shown in figure 5 below. Moreover the results were supported recently by the final report of the Resolution Foundation's Intergenerational Commission[25].

2.21 In those circumstances it would be inappropriate if a scheme for financing old age care greatly exacerbated the relative deterioration in the wealth of younger groups. If they are not to feel aggrieved, they must be confident that their contributions are insuring them themselves against insecurity caused by the need for care in old age and is not simply another transfer to their elders.

2.22 In a collective scheme, intergenerational fairness dictates that people with similar lifetime incomes should make similar contributions for the same promise of care in old age. That has clear implications for inter-generational fairness. When a scheme starts up, a young person will pay in for perhaps 40 years. Someone aged 55 with the same income may pay in for ten. Obviously they cannot be expected to pay in at the same rate if they receive the same benefits. There are two potential solutions. One is to levy the same percentage of income for everyone but to arrange that the benefits rise over time. For example means tests could become more generous over time benefitting younger age cohorts. The second approach is to make the levy depend on the age cohort of the contributor and make the same promise to everyone. The second approach has two advantages and one disadvantage. The advantages are firstly, that it does not depend on a promise to increase future benefits, which could be broken under fiscal duress so is not really credible;

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[25] Resolution Foundation, op. cit. www.resolutionfoundation.org

secondly it is likely to generate more revenue in the early years of the scheme. That is important if there is to be any inter-generational transfer to the current elderly to improve care conditions immediately. In any move to a fair scheme there is an issue of transition. Some people will need care in the near future who have not had an opportunity to contribute to any care scheme. Given the pressures on care budgets set out in the first chapter it may be difficult to provide adequately for such people without some drawing on the scheme.

Figure 5: The extent to which survey respondents feel optimistic or pessimistic about being financially secure in retirement, by age group
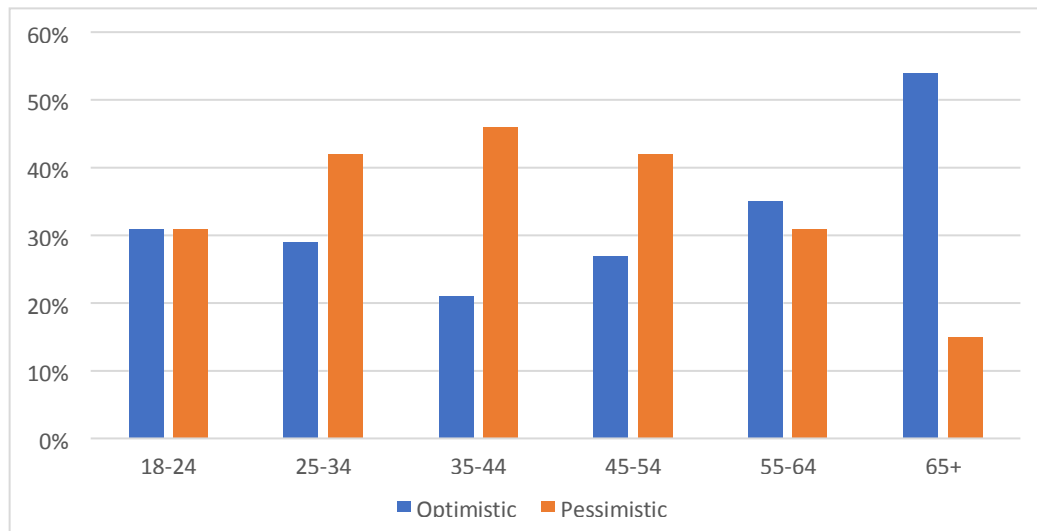
Source: Wood and Vibert op.cit. December 2017

2.23   The one disadvantage of relating the levy to age cohort is extra administration in the collection of the levy; it would be necessary to know the age cohort as well as the income of everyone paying the levy. This should not be an insuperable problem for HMRC but only discussion will reveal the size of any additional collection cost. The cost depends on the internal procedures of HMRC.

Equitable insurance

2.24   It is assumed that a care levy would be related to income, both to raise enough funds and in the interests of distributional fairness across individuals and families. If the contributions are regarded or presented as a compulsory insurance premium rather than a tax, however, other considerations apply. Because contributions are related to income and involve some transfer to non-contributors it is evident that, viewed purely as insurance premia, the contributions cannot be actuarially fair or accurate for everyone. That is to say they will not accurately reflect for each individual their chances of needing care and the expected payments they would otherwise make. The system is inevitably to some extent redistributive. Nonetheless, the question arises: are there some conditions that should apply to even expensive insurance? One possible principle – let us term it principle X - is that lifetime contributions should not exceed the biggest possible benefit that could potentially be drawn. Consider life insurance as an illustration of the point. If you live a very long time it is quite possible

that your lifetime contributions may exceed the pay-out to your beneficiary but you would not expect that to happen if you die young. Similarly if you never need old-age care, your payments-in will exceed the zero benefits you draw. However, if you need the most intensive care possible for many years and the benefit you receive is still less than your payments-in over the years of contribution you would feel, reasonably, that you had not been paying any kind of insurance premium, merely a tax.

2.25   That situation is unlikely to arise for people on low or modest pay with little wealth and inexpensive houses. If someone pays 1 per cent of an annual taxable income of £20,000 for 40 years their total pay-in would be £8000. If they needed three years of care the bill could be around £120,000. If the scheme allows the wealth means test bar to be raised to, say, £100,000 from £50,000 and their house were worth £75,000, they would save £25,000 for the contribution of £8000. Those numbers are arbitrary and merely illustrative but the point stands that the scheme is likely to be a good deal for an owner-occupier on a low income with a modest home.

2.26   Now consider someone in more comfortable circumstances with annual taxable pay of £100,000 and a house worth £500,000. Their pay-in over 40 years is £40,000 but with a wealth-means test of £100,000 the scheme would pay them nothing unless their care bill was over £400,000. A care bill of £120,000, as in the previous example, would be met entirely from their wealth. They gain nothing from the rise in the wealth-test bar or from the scheme as a whole. Their levy contributions are a pure tax.

2.27   Suppose we set five years of care at £50,000 a year as, not the worst case, but a bad enough case. Can we ensure that the benefit to anyone would exceed their premium if that case befell them? The comfortably off person in the case above has paid £40,000 so should get a benefit above that. And she stands to pay the full £250,000 using the equity of her house. If she had to pay only £200,000, the gain would exceed her premium payments. That would apply if only 50 per cent of her wealth above the means-test threshold was eligible for care costs.   For people wealthier still even that arrangement would not enable them to meet the principle X condition.

2.28   If we accept principle X, these considerations do imply that there should be some upper income limit for payment of the levy. Its precise location is a matter of political preference – or may be dictated by the form of the tax used to collect the levy. Yet it is evident that payments of the levy related to income above £100,000 are likely to be unambiguously a tax since commensurate insured benefits could not compensate for the payments. It also appears necessary to have only a proportion of wealth, including housing wealth, being eligible to pay care costs rather than having a threshold above which all wealth is at risk. The combination of an upper earnings limit for contributions and a proportion-of-wealth means test would help to engage middle-class support for the scheme. If the levy is implemented by an increase in income tax, increasing the basic rate only would imply a contribution ceiling at an income of around £45,000.

2.29   A contribution ceiling may lead some to regard the levy as regressive or at least less progressive than a tax across all income-tax bands.   But it should be looked at in combination with the means tests that are applied for beneficiaries. If some proportion of personal wealth has to be used to pay for care before state support is available there is, in effect, a wealth levy, subject to no ceiling, applied to people requiring care. In such a system there seems to be no need for the kind of ceiling on

contributions that have been proposed by the Dilnot Commission and others. Only a proportion of wealth is being taken so a ceiling becomes redundant. Of course there is no wealth levy on people not requiring care but they are not receiving anything either. The income ceiling on a levy can be avoided if no effort is made to present the levy as compulsory insurance. If it is presented simply as a tax the argument for a ceiling falls away. The only consideration then is the geographical mobility of very wealthy people and the need not to reduce revenues by inducing the very wealthy to elect to declare their primary residence outside Wales for tax purposes.

2.30   An alternative approach to entitlement in the collective scheme would be to have the scheme pay a fixed sum to everyone requiring care. The sum would meet care costs for a period of time after which the individual would meet costs subject to the usual means tests. This in certain respects is the opposite of the proposals in the Dilnot Report[26]. That proposed, on the contrary, that individuals met their own care costs subject to means tests up to a limit above which the state would pay everything. The idea behind a ceiling for care costs was to encourage a market in private insurance. Because it would be hard to insure against catastrophic costs, these would be assumed by the state, allowing private insurance to indemnify people against the rest. The government agreed in principle to the idea of a ceiling but its implementation has been successively postponed. There is little sign of a private market for care insurance emerging on a significant scale. In any case, if people do not save enough, the probability is that they will under-insure unless obliged to do so.

2.31   Indeed it could be argued that insurance is one area where the state has an advantage over the private sector; by making insurance compulsory it broadens the insurance pool, reducing the risk of a small sample and removing problems of adverse selection[27]. Premia can therefore be lower under a compulsory system than under a voluntary one, particularly if the latter is fragmented with several suppliers.

2.32   Whichever system is chosen, there are likely to be political limits to the level at which a supplementary care levy can be imposed, even if it is possible to present it as a form of compulsory insurance. As noted in the previous chapter, the public's appetite is for moderate taxes to deal with the worst cases rather than substantial taxes to provide free care. That means people will have to continue to pay towards the cost of their own care and the precise benefits flowing from a care fund will need to be worked out, including the form of means tests governing access to those benefits. The additional finance should go to ensuring care is available to all who need it but an important political choice will be: how much of that finance should go to raising the quality of care – by *inter alia* mandating an increase in Local Authority tariffs for different classes of care - and how much to improving the terms on which it is accessed? Making means tests less severe means the individual sees a potential financial benefit from their contributions but such changes have a cost. The money could be used for improving payments to carers and so ensuring a better provision for those

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[26] Commission on Funding of Care and Support, July 2011
http://webarchive.nationalarchives.gov.uk/20130221130239/http://dilnotcommission.dh.gov.uk/
[27] Adverse selection is the tendency with voluntary insurance for the people most likely to need insurance to subscribe while those who are less vulnerable opt to take a chance and not participate. The insurance pool is therefore smaller and weighted to people likely to claim, thereby raising the cost of the insurance. A compulsory scheme avoids that and facilitates cheaper insurance.

receiving public support. That trade-off needs to be examined by experts and discussed with the public.

C. A contributory system?

2.33   It may be that public acceptability depends not just on the element of hypothecation but on the scheme's being contributory, i.e. one where at least some of the benefits are confined to people who have paid the levy. A contributory system links contributions with benefits and so is different from a tax increase that provides social care to all people in Wales indiscriminately.

2.34   Experience shows that it was more difficult to establish an advanced welfare state that had substantial elements of redistribution in a country with open borders and extensive immigration. The United States, for example, a country built on immigration has always had meagre welfare provisions by the standards of rich countries. The most advanced welfare states were developed by small homogenous countries like Sweden and Austria at a time when immigration was insignificant. In the UK, opinion surveys have charted a marked decline in public support for "welfare" and declining sympathy with the disadvantaged in recent years at the same time as concern has grown about accelerated immigration. Much of this concern is expressed as resentment of competition for public services and a belief that immigrants are entitled to social security benefits before they have made much contribution to the system. The latter concern demonstrates that the public retains a strong attachment to the contributory principle. These public attitudes are of direct relevance to policy in Wales. The Brexit vote probably indicates that the Welsh public shares many of the concerns of the UK public as a whole. If the Welsh public and politicians wish any element of the welfare state to be more generous in Wales than it is in England, the question of sustainability arises, given that there is – and will remain – complete freedom of movement and residence across the Wales-England border.

2.35   Social care is currently paid from local authority budgets and these are determined by the Welsh Government from its budget, which is largely determined by the Barnett formula. That formula now recognises that Welsh needs are greater than the English average but makes no specific adjustments for changing Welsh needs and its effects can be perverse. Suppose, for example, that a substantial proportion of the elderly in Lancashire retire to North Wales. English formulae would reduce revenue-support grants to Lancashire local governments on the grounds that their needs had decreased. There would be an increase in the Welsh block grant for the increase in population but it would not take account of the age and specific needs of the incomers. The increase may well not be commensurate with the decrease in payments to Lancashire. If the Welsh Government promises better social care for the elderly to people retiring from England it incentivizes more elderly people to move and it cannot be sure that adequate finance will follow via the block grant. Arguably that would impose an unfair burden on Welsh contributors.

2.36   If the Welsh public pays for enhanced social care in old age with more generous means testing, for example, a contributory system implies that the easier means test would be available only to Welsh residents who have made enough payments into the scheme. For people who have not made contributions the default position would be similar to that applying in England. Parity of criteria for

support means people are not penalized for retiring to Wales but nor are they rewarded. Of course to the extent that care home provision is better in Wales that would be enjoyed by all residents equally.

2.37   The Welsh public seems more likely to support paying for enhanced social care in old age if they know all benefits are not leaking to non-contributors on a significant scale. A contributory system therefore dominates on our first two criteria – it is more effective because it is likely to restrict demand relative to resources, compared with a non-contributory system; it is more likely to be acceptable to the public. It could also be considered fairer. On the downside, it could be seen as creating divisions in the UK's fiscal system, perhaps an inevitable consequence of devolution but not something to be done without good reason. Moreover, it will be clearly more costly to administer. The issue is whether its advantages on the first three criteria justify the downside on the last two criteria.

2.38   Setting up and maintaining a contributory tax/insurance system for Welsh residents can at present only be done by HMRC. The Welsh Government itself lacks the capacity. The HMRC is the final arbiter of what the cost of such a system would be compared with administering a simple tax. Some indication of potential costs can be obtained, however, from the experience of local authority pension funds.

2.39   The 89 local authority pension funds in England and Wales provide evidence on the costs of managing pension funds [28]. Their costs fall under three headings: administration, governance/oversight, and investment management. Administration costs are those mainly associated with having a contributory scheme. Administration covers the costs of collecting and recording contributions, assessing entitlements and paying those due. Governance is the overall oversight and direction of the scheme while investment management covers the allocation and placement of assets in any fund.

2.40   Costs vary with scheme size and this has a number of dimensions, for example: number of members, total of contributions and size of the fund under management. A Welsh insurance scheme would be untypical in that it would have more contributing members than any of the pension funds; indeed, covering all workers resident in Wales, it would have about as many as all of them put together. On the other hand the value of annual contributions would be around the same size as those of West Midlands, Tameside or West Yorkshire, depending on the tax rate chosen. Generally, one would expect administration costs to rise with the number of members and the variation in their circumstances. Administrative costs do clearly rise with scheme size. They are more closely related to total members including existing pensioners and others with deferred benefits than with contributing members alone. The average annual spend on administrative costs across 88 of the funds (one has inadequate data) was £1.3 million but the average fund has only 63,000 members. The three with contributions on the same scale as a Welsh fund had administrative costs ranging between £3.3million and £5.3 million in 2016.

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[28] https://www.gov.uk/government/statistics/local-government-pension-scheme-funds-for-england-and-wales-2016-to-2017

2.41   A simple model was estimated of the relationship between costs and members[29]. Extrapolating the relationship to a scheme with 1.4 million members would imply annual costs of some £16 million. There seems no reason why the costs of administering a contributory scheme of social insurance should be greater than running a pension scheme. Indeed the costs could well be lower since administration of benefits amounts only to certifying eligibility not assessing a pension entitlement. Note, however, that those are running costs. HMRC may also require set-up costs for instituting a contributory scheme.

2.42   Consider an increase in income tax in Wales of one penny in the pound, yielding some £200 million. Making such an increase part of a compulsory contributory scheme of insurance would take up some 8 or 9 per cent of tax receipts, if the estimate of administration running costs is of the right order of magnitude. Whether such a cost is worth the additional public support a contributory scheme might bring or whether it could be self-financing in damping demand from incomers we cannot say definitively. On the face of it, the cost seems tolerable but ultimately it is a political decision and HMRC's input will be essential.

A contributory system – personal or collective?

2.43   Even within a contributory system there are different possible structures. A political choice to be determined at the outset is: does the system provide a collective protection unrelated to how much an individual has paid in – following the principle: from each according to his ability, to each according to his needs? Or are individual accounts maintained and individual entitlements accumulated proportionate to premia paid? Since it would still be an insurance fund any entitlement of course would be conditional on the need for care arising. It is perfectly possible to organise such a scheme though the costs of administering it would probably be significantly higher. There would still be some scope for redistribution within its operation though probably less than in the collective case. It would be analogous to the old Supplementary Earnings Related Pension Scheme (SERPS) that used to exist. This would be a supplementary earnings related care insurance scheme (SERCIS).

2.44   How could benefits vary with contributions in the personalized insurance case? The tariff paid by local authorities supporting care costs could vary with contributions, enabling people to buy better accommodation. Many would think it invidious, though, if that resulted in different classes of genuine care support within a given residential facility. Given an approach of making an initial payment to everyone requiring care, that payment could be contribution-related. Alternatively, means tests could vary with the scale of contribution.

2.45   There are many international precedents for contributory personalized pension schemes. Chile was an earlier adopter of such a scheme and it has been emulated in Eastern Europe. As an insurance rather than pension fund the administration of a SERCIS fund would differ in detail but would be

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[29] A regression gave the equation: Admin. Cost = = -950K + 0.10*total scheme members + 150*ln(members). The last term is the natural logarithm of the number of members and was included to allow for scale effects. It was at the margin of 95 per cent significance. This equation fitted to 88 local authority schemes for 2016 had an adjusted R^2 of 0.83.

comparable. An argument against such a scheme, apart from administrative cost, is that no-one seems to have expressed a demand for it and no-one this author has spoken to has been warm about it. Politically it may lack support. It has been assumed, therefore, that the system will be of the collective type offering benefits unrelated to the scale of individual contributions.

2.46   We term the combination of a contributory scheme with age-related tax or contribution rates the "radical solution". It raises a large number of administrative issue(s). In the next section we consider how these could be managed.

D. How the radical solution could work

2.47   Let us suppose that paying in begins at age 20 and continues until the future state retirement age at 67, that is 47 years (these numbers can, of course, be altered). Now consider someone who begins paying at the age of 27, (because they are that age when the scheme starts or because they finish education or move to Wales at that age after the scheme has started). That person will pay for 40 years. Let us suppose that their payment is x per cent of income. Someone on the same income who is 57 when the scheme begins will expect to pay for just ten years, not 40, so they should pay not x but 4x per cent of income. We can apply that principle generally. If someone starts paying at a given age, θ, they will pay a proportion of income equal to: $40/(67-θ) * x$.   For example, someone who starts paying at age 47 pays 40/20*x, that is to say pays twice the rate of someone starting at 27. A 21 year old would pay 40/46*x, that is 87 per cent of the 27 year old. What might this mean in practice? Suppose someone at 57 pays two per cent of income, the 27 year old would pay ½ per cent and so on. In practice age cohorts could be defined as annual in that way or aggregated so that everyone in a given five-year band, eg 20-25 was assigned to a single cohort.

2.48   Note that these rates pertain to the age at which payment begins. The people in a given age cohort pay at the same rate throughout their contributing life. Contributions rise with the age at which you start; they do not rise for the individual as she gets older. Note as the scheme matures and older cohorts retire, most people paying in will have started earlier and the disparity of rates paid will diminish and eventually disappear. As noted, in practice, the rate could be a continuous function of age at the time of entry into the scheme or there could be a banding arrangement where people within a given age range paid the same rate.

2.49   Such a scheme poses several questions:

• What about people who leave Wales to work elsewhere and then return?

Someone's contribution age would be adjusted for periods of non-payment. Consider, for example, someone who started work at 23, left Wales at 30 and returned at 50. Their target contribution is 40 years at x per cent of income. They will in fact have an expected 17 years left to contribute and have already contributed 7 years at 90 per cent of x (the rate for a 23-year-old starter). The new rate they pay at 50 is (40-6.3)/(67-50)*x = 1.98.   That is to say they would resume payment at nearly twice the rate for 27 years-olds. On the above example they would pay 0.99 per cent. Alternatively, they could opt to continue payments while not in Wales if they

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intended to retire here. There would have to be a system able to collect and process such payments.

- What about people who retire before 67?

Early retirement for genuine reasons of ill health or incapacity would not affect entitlement. Voluntary early retirement could be dealt with in one of several ways. Firstly, the person could be required to maintain payments out of pension income until age 67 in order to retain full entitlement. Failure to make such payment could result in a reduction in entitlement. The nature of that reduction would depend on the detailed care promise that is made to participants in the scheme. A full answer must be deferred to discussion of the promise.

- What about people who leave Wales after contributing?

If people leave and retire elsewhere after making a few contributions, they abandon their entitlement under a de minimis rule. If moving at a late stage with most contributions made, they could retain full entitlement on payment of the appropriate cash sum. If they complete the full contribution and then retire elsewhere, they would retain the right to a cash contribution to bona fide care costs. The payment would depend on the general care promise and the costs of care in Wales. The insurance fund would not make any allowance for different care costs in other places.

- What about people over 57 now, who will not be able to make sufficient contributions to qualify for the care promise under the scheme?

Here there is a serious political question to be decided. How much of a transfer should younger age cohorts make to the care of today's elderly above and beyond what is being done already via taxation? We suppose that some minor proportion of contributions would go to the immediate improvement of social care. That proportion should be analysed in terms of the optimal growth of the community insurance fund - by comparing the social care promise that can be made to long-term contributors to the fund with the level of provision being experienced at present and in the next few years.

- What about the unemployed or people on benefits?

Their contributions would be paid as part of the benefit system. If they are entitled to benefits, they are entitled to be included in the scheme. It will be a political choice whether the Welsh Government pays the full contribution on top of existing benefit or whether it expects benefit recipients to make some contribution out of the payments they already receive. There is also the issue of people not in employment or in receipt of benefits such as house-spouses who care for a home or family and are supported by a working spouse. One possibility is a family contribution rate. A worker could opt to pay a supplement, say 50 per cent more, to their contribution to cover a live-in partner.

2.50   The rates at which the levy would be applied evidently depend on the assessment of the funding gap and projections of likely revenue from a system such as that outlined above. Detailed calculations to throw light on those issues are shown in chapter five.

III. A funded scheme or pay-as-you-go?

3.1 A pay-as-you-go system (PAYG) for social security or pensions is one where current taxes or contributions go directly to pay current claimants or pensioners. The system therefore relies on an implicit contract between different age cohorts or generations. Current workers pay current beneficiaries in the expectation that, when they become claimants or pensioners, workers at that time will foot the bill. A funded system, on the other hand, is one where current taxes or contributions are paid into a fund and the income of that fund meets the claims of future beneficiaries or pensioners. Mixed systems are possible, ones partly funded and partly PAYG.

3.2 Note that if Wales went for a system of strong hypothecation where a levy paid for all social care spending a substantial part of the levy would have to be disbursed immediately to meet current spending needs. There would inevitably be a large PAYG element. The funded part could only apply to future expenditures on social care. A fully-funded social care system is not an option. We can apply a funded system to some of the growth in care spending if we choose. The current level of spending, and a bit more, will continue to be financed out of current taxes, whether it comes from the Welsh Government general budget or whether it comes from a levy.

3.3 Moreover a funded system can take different forms corresponding to the political choice referred to above. A fund can be collectively owned where a record of contributions qualifies someone to benefit on set conditions independent of the scale of the contributions. Alternatively it could consist of a set of personalised accounts where contributors build up a personal, conditional entitlement proportional to their payments. The latter would be more like a fund operated by a private insurance company with different scales of cover depending on premiums.

3.4 While the central state in the UK does not really maintain funds to support its pension or social security obligations, it is common practice to do so in other countries. Even countries which have pay-as-you-go (PAYG) social security systems can also maintain social security reserve funds (SSRF) to smooth necessary social tax rates or to take advantage of higher returns on international securities[30]. In the UK, of course, local authorities maintain pension funds to cover obligations to their workers. This raises the question whether a scheme to fund social care for the elderly in Wales should be a wholly PAYG system in which current revenues from taxes or contributions go immediately to pay current beneficiaries of the scheme or whether there should be a partly-funded system in which revenue is paid into a fund, some or all of which is invested for current and future beneficiaries. This is a question which has been posed and discussed quite generally and the following remarks draw on that discussion[31]. PAYG was favoured when social security was improved

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[30] See Juan Yermo "Governance and Investment of Public Pension Reserve Funds in Selected OECD Countries." OECD 2008   https://www.oecd.org/finance/financial-markets/40196093.pdf   Table 1 gives a list of such funds in 15 countries as of 2007.

[31] An approachable summary of the debate is: Jan Kuné "The controversy of funding versus pay as you go: what remains of the debate?" 2001 The Geneva Papers on Risk and Insurance, Vol 26 No.3 pp 418-434

after World War II because it allowed better benefits such as pensions to be paid immediately. Adopting a funded system would have left less or no money for immediate improvement while taxes went into building up a fund. The current situation in Wales with respect to social care is different in that it is believed that demand will rise over the next decade or two for demographic reasons. An immediate improvement in care is desirable but the need will be much greater later. PAYG also has advantages in periods when investment returns are low and wages and the labour force are growing quickly, increasing the share of wages in national income. That was true of the UK in periods after WWII such as the 1960s but the opposite has been true since the 1980s when the share of wages has declined as both labour force growth and wage rates have slowed. In general over the past 100 years returns to capital have exceeded wages growth.[32]

3.5   Another advantage of a PAYG system is simplicity and familiarity with limited costs of administration. It operates largely within the existing revenue collection and expenditure control functions of the government. A funded scheme, on the other hand, will have set up costs and ongoing costs of governance and fund management. These must be weighed against any advantages. We have seen that moving to a contributory scheme from a simple tax incurs administration costs that could be of the order of £16 million annually. The choice of whether to have a PAYG or funded scheme is another, independent decision which will imply other costs. The options may be presented as a matrix in table 5.

Table 5: Costs of different combinations

	Non-contributory	Contributory
PAYG	No special charges	Administration (£16 million p.a.?)
Funded Scheme	Governance and fund management (£2+ million p.a.?)	Admin + governance and fund management

3.6   We derive rough estimates of fund governance and investment management costs, once again, from the experience of local authority pension funds. The average fund size across the 89 pension funds was £2.4 billion, broadly where a Welsh fund might be in 2030[33]. Investment management expenses averaged £9.8 million but the range of variation was enormous from a low of £645,000 to an astonishing £65.7 million. The lowest number was for managing a fund of £4 ½ billion. With appropriate methods of semi-passive investment and avoiding expensive outsourcing, a sum nearer the minimum should be achievable, one not higher than double that minimum, around £1.3 million.

3.7   Governance costs across the LA funds average £602,000 p.a., though there was a great variation between £43,000 and £3.7 million. Although governance costs should be largely fixed there was some variation with the size of the scheme. The variable that best explained variation was the size of the fund itself. A model based on that relation would give a projection of some £625,000 for the Welsh fund, not far from the average of local authorities[34]. Allowing for some uncertainty,

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[32] Piketty, Thomas "Capital in the 21st Century" 2014 Harvard University Press
[33] See chapter 5 where we show how a Welsh fund could evolve.
[34] Estimate based on a linear relation: governance costs = 270,000 + 0.00014*fund size. This relationship has a poor fit with an adjusted R^2 of 0.36, indicating that governance costs are not consistently related to scheme size. The prospective size of a Welsh fund, justifying this estimate is demonstrated in chapter 5.

governance costs should not substantially exceed one million pounds a year, though a policy of extensive public engagement could increase that figure. Governance and management costs of a fund together should be therefore around £2-3 million a year, or around one per cent of the receipts of a one per cent rise in income tax. Whether to adopt a funded or PAYG system is likely to be a less weighty decision than whether to adopt a contributory or non-contributory scheme – both in terms of the expenses involved and the relations with the rest of the UK fiscal system. Given there is, nonetheless, a cost we have to consider what the advantages are of adopting a funded scheme. There are six more-or-less distinct advantages.

3.8   Firstly, a minor benefit is that a funded scheme will enable the government to set a contribution rate now in the expectation that it can be held constant even as the ratio of those in care to workers rises. That would be difficult with pay-as-you-go. Hence, tax or contribution rates can be smoothed over time. Some smoothing is possible with PAYG but could imply a large buffer fund, which would itself pose issues of management.

3.9   Secondly, funding makes it easier to maintain equity between generations or age cohorts. PAYG means the burden on working age cohorts depends on the old-age dependency ratio and can therefore vary randomly. In Wales, as we have seen, the main demographic burden lies some 20 years ahead and a pay-as-you-go scheme would require rising contributions and would be difficult to make fair in its treatment of different age cohorts. With a funded scheme contributions and pay-out rates can be set with a view to intergenerational fairness.

3.10   Thirdly, if taxes are more acceptable to a sceptical public when hypothecated to a purpose of which they approve, the existence of a fund makes hypothecation of revenues concrete rather than being merely a promise. It is likely to boost public confidence in the system.

3.11   Fourthly, creating a fund has potential macroeconomic benefits. It is an act of public saving that is highly likely to raise the overall rate of saving in the Welsh economy. In a world of fully rational far-sighted households and consumers it could be argued that forced saving into a public fund would simply substitute for and reduce private saving. In reality a levy is highly unlikely to result in a fully offsetting reduction in private saving. In the UK as a whole the average savings rate out of household disposable income is little over 5 per cent and in Wales, a relatively poor part of the UK, it is likely to be lower[35]. Much of that saving is not discretionary but contractual, things like mortgage repayments or pension contributions. There is not much purely discretionary household saving to be reduced, certainly not among poorer households. Consumption will therefore be reduced by a new levy and the saving rate will surely rise. The additional saving in the fund can be invested in order to grow national wealth or can displace finance from outside Wales, reducing external payments . In effect it becomes a community fund or sovereign wealth fund.

3.12   In an economy where the rate of return on capital investment exceeds the growth rate, increasing saving and investment will eventually raise the path of income and consumption over time – a

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[35] In Q3 2016 the household savings rate from disposable income was 5.6 per cent for the UK. See: www.ons.gov.uk/economy/grossdomesticproductgdp/timeseries/nrjs/qna. The Welsh rate is not available since regional GVA is not disaggregated by expenditure items.

standard result in economic theory[36]. In other words the immediate loss of consumption will be more than compensated by higher consumption in future. There is evidence that most developed Western countries would usually be in this position[37]. Certainly in Wales, which runs a public deficit with the rest of the UK of well over 20 per cent of GVA and where the UK itself runs a substantial current account deficit, there must be a strong case for raising the savings rate. Despite their external deficits, both the UK and Wales have low rates of investment compared with other developed countries. The social care fund could contribute to alleviating that problem.

3.13   Fifthly, a situation where returns on capital exceed the growth rate of the economy implies that the funded system will produce more resources for care of the elderly for the same tax or contribution rate than a PAYG system. Note that in an open economy with free capital movement the investment returns that are relevant are not just those available in the home country but those available world-wide. Essentially, at a given tax rate, revenue from PAYG will rise only as fast as wages do. With a funded system resources will grow at the rate of return on international capital, which is typically higher.

3.14   Sixthly, it should be noted that under weak hypothecation social care for the elderly in Wales will not be wholly funded from the fund, which will augment the budget for social care coming from the government's general revenues. In effect then, having a partly funded system introduces diversification into the source of revenue; some growth will come from the growth of the tax base, largely determined by wage growth, and some from capital investment. Diversification provides a more robust system irrespective of the relative growth of wages and capital returns in coming decades[38].

3.15   Some writers have disputed the general conclusion of the economic literature that funded schemes are usually superior to PAYG[39]. Their argument largely depends on disputing whether raising the savings rate will necessarily increase accumulation; it may give rise to a deficiency of aggregate demand and unemployment – a Keynesian style argument. This argument has little force in the current Welsh context where the economy is so open that a high proportion of consumer spending is on goods and services imported from the rest of the UK or elsewhere. That is likely to be particularly true of the most marginal or discretionary expenditures, the ones most likely to be reduced by a levy. Imports into Wales from the rest of the UK and the world might fall somewhat while any loss of domestic demand in Wales would be small. And to the extent that the fund was invested in Welsh based projects the accumulation could itself raise demand in the Welsh economy.

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[36] In a competitive economy growing steadily, the growth path which permits the highest rate of consumption is the one where the return on capital equals the growth rate. This venerable result, based on fairly restrictive assumptions, goes back to Phelps E.S. "Accumulation and the Golden Rule" 1961 American Economic Review vol 51 pp 638-43.

[37] Abel Andrew, Gregory Mankiw, Lawrence Summers and Richard Zeckhauser,.1989. "Assessing Dynamic Efficiency: Theory and Evidence." Review of Economic Studies 56. This has been disputed more recently by Francois Geerolf in a working paper from UCLA. See www.econ.ucla.edu/fgeerolf/.

[38] See A case for the partial funding of pensions with an application to the EU candidate countries, Economic Papers, Directorate-General for Economic and Financial Affairs 2001.
http://ec.europa.eu/economy_finance/publications/pages/publication11052_en.pdf

[39] Eladio Febrero and and Maria-Angeles Cardaso. "Pay-As-You-Go versus Funded Systems. Some Critical Considerations" July 2006, Review of Political Economy, Volume 18, Number 3, 335–357.

3.16 The main risk to the funded approach is that poor investments can be made and, in any case, investment returns can be volatile. These risks are analysed in chapter four and the means to mitigate them are discussed. Volatility is analysed explicitly in chapter five. Most of the investment of the fund must be in safe, traded assets like quoted bonds or equities. A proportion, however, can be invested in projects with social utility in Wales – like building low-cost housing or investing in infrastructure – so long as these stand to yield an adequate return.

3.17 From these arguments I conclude that a funded scheme is preferable to PAYG on two conditions. One is that building a fund in the face of current need is practical and does not require excessive tax rates; the second is that the costs of administration are not prohibitive. The evidence that costs need not be prohibitive is suggested from local authority experience in managing pension funds. The practicality of building a fund is addressed quantitatively in chapter five.

3.18 A final question requiring a political choice is: are benefits predefined or do they depend on the investment performance of the fund? Predefined benefits means if the fund cannot meet the promises made to people requiring social care, the government will find money from its budget or increase the social care levy. The risk of fund under-performance is then borne by the active population paying taxes or levies. If benefits vary with fund performance the risk is borne by those people in receipt of or needing care. In work for this report the assumption has been made that benefits will be predefined so that a guarantee of care can be given on clear terms.

IV.   Organisation

4.1   If we consider the organisation of a social insurance system as a whole, it has two inevitable elements: collection and administration. There is a requirement to maintain the relevant records of contributors, particularly in a contributory system.   In a funded system the administration requirement may be more extensive if the more distinctions are made about individual entitlements but there will also be an additional element of fund governance and fund management. This chapter considers these elements.

Collection

4.2   In principle, three broad approaches to collection appear possible. The levy could be set up as a supplement to income tax, as a supplement to national insurance or as a wholly new impost. Some general considerations are outlined but no research has been done into these options.

4.3   Income tax has the advantage of being devolved from April 2019. All Welsh residents will have a tax code that identifies them as such even if working outside Wales. Levying a supplementary rate on them would therefore be easy and presumably inexpensive. On the other hand income tax codes do not usually reveal age cohort so there could be issues in making contributions age-cohort dependent. Moreover income tax bands and thresholds are not devolved so contributions would conform to those. There would be no scope for adjusting the lower threshold to match national insurance, for example, and if the supplement were applied to basic rate tax that would define a ceiling for contributions with no ability to vary it. Indeed the Welsh Government would be at risk of the UK government varying tax bands and upsetting its revenue calculations, though such changes should be a matter for consultation. Applying the supplement to higher rate tax would give a different much higher ceiling.

4.4   National insurance data bases carry information on age cohorts so an NI supplement may be easier to make cohort-dependent but the system is not devolved. That means national insurance numbers do not have a Welsh identifier. Using the system would no doubt require agreement from the UK government and discussions with HMRC.

4.5   Without a specific enquiry it is not possible to say how readily the HMRC could combine the data bases at their disposal to identify and assess Welsh residents for income and age cohort together. Nor is it possible to guess what they would seek to charge for doing so. It seems unlikely that the requirements are sufficiently different from existing taxes that the levy should be classified as a new form of direct impost. If it were, the UK government (HMG) would be asked to agree it and HMRC could be asked collect it. That would give the Welsh Government greater control over its details. There is no obvious reason why HMG should resist since no tax competition is involved and there are no obvious negatives for English tax-payers. To the extent the system tackles a general problem it could even be regarded as an interesting pilot.

4.6   Another issue is the inevitable connection between collection and administration of a contributory system. Other bodies exist in both public and private sector who could administer the system but they could not normally access HMRC data in order to do so, given confidentiality of tax returns. So collection and the administration of a contributory scheme will surely go together unless HMRC agrees to release contribution records to the Welsh Government and its appointed administrator. That puts HMRC in a monopoly position in assessing costs.

Administration

4.7   We have assessed potential administration costs with reference to those incurred by local authority pension funds. Administration of a contributory insurance system should be less expensive than the administration of pension schemes, which must process more detailed information on the entitlements of each scheme participant. Welsh local authorities have run defined-benefit pension schemes with employer and employee contributions for many years. Private pension providers have similar capabilities and have systems enabling pension entitlements to be portable. None of these elements provide any insupportable difficulties. HMRC ran a SERPS scheme between 1978 and 2002, so it faces no profoundly new issues of administration that it has not dealt with before.

4.8   Yet if the scheme has an Achilles heel it lies in the cost of collection of the levy and in associated administrative cost. This study has very roughly estimated those costs at up to £16 million a year. Since HMRC is in a quasi-monopolistic position, which it may wish to exploit, there is no escape from negotiation of those matters with HMG and HMRC. If the system were PAYG there would be no more to say. If the system is partly funded, however, there are additional questions about the operation, governance and management of a fund.

Fund organisation and governance

4.9   In a funded scheme, the fund itself would not be responsible for levy collection or the administration of the rights and entitlements of levy payers. Those would be the responsibility of the Welsh Government using an agency like HMRC. To underpin the hypothecation of the revenues from the levy, the Welsh Government would establish the fund by statute, giving it a legal identity and a contract to supply it with all the proceeds of the levy. There is a range of precedents used in the UK and other countries for the organisation of a social care fund. The OECD study by Yermo, cited above, reviews the governance structure and organisation of Public Pension Reserve Funds and Social Security Reserve Funds in a number of countries. Angela Cummine has similarly reviewed 79 sovereign wealth funds around the world.[40] The OECD has published a number of guidelines on

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[40] Angela Cummine "Citizen's Wealth" Yale University Press 2016.

governance and investment standards in public pension funds[41], as has the International Social Security Association[42]

4.10 What distinguishes an SSRF or a sovereign wealth fund from a pension fund proper is that the ultimate beneficiaries, the general public, do not normally have legal ownership of the fund's assets. That would necessarily be true of a social insurance fund since the ultimate beneficiaries are unknown at the time of inception. The legal owner is the institution that administers the fund. This opens the fund up to the possibility of state or political influence. The OECD and ISSA guidelines are partly about addressing basic governance and investment management issues to protect funds from political manipulation. The guidelines specify a governance structure that separates operational and oversight responsibilities.

4.11 Yermo summarises: "At the centre of the governance structure is a governing body that has ultimate responsibility for the fund and is accountable to its beneficiaries. The members of this body must have clear fiduciary duties and a specific, measurable mandate, and must possess relevant expertise to be able to carry out their functions. The governing body may be a government ministry, the board of the social security institution or the board of an entity established expressly for the purpose of investing the scheme's funds. The latter, segregated set-up may be preferable as a protection against political interference, especially if a government ministry is responsible for administering the social security scheme[43]."

4.12 In the Welsh case, social security, including national insurance is not devolved. Ultimate responsibility for a new system of compulsory insurance must rest with elected politicians. It may be doubted, however, whether the Welsh Treasury or Finance Department currently has the resources or experience to discharge the full governance function. Creating an independent statutory body with a Board of Governors is the obvious approach. The necessary legislation should specify that the fund is to be used only for social care and could specify the bodies to whom disbursement would occur (different local authorities). Disbursements would be set on some formulaic basis, subject to periodic review by the government minister responsible. The Board of Governors would therefore be tightly circumscribed so as to have negligible influence over social policy. Their expertise would be in running and investing the fund, not in determining how it was used.

4.13 If the fund makes disbursements to local authorities as the agencies providing public support for social care, there is a possible inconsistency between the fact of local provision and the existence of a national levy with some explicit or implicit national promise of social care support. If means tests are uniform across Wales, should tariffs for residential and non-residential care also be uniform? Is extra central regulation of the arrangements of local authorities an implication of a new centralised funding source? That is a matter for discussion by experts in the provision of social care and for submission to public opinion. It is not further considered in this discussion of financing options.

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[41] OECD (2005a), Guidelines for Pension Fund Governance: Recommendation of the Council, available at http://www.oecd.org/dataoecd/18/52/34799965.pdf.
[42] ISSA (2005), Guidelines for the Investment of Social Security Funds, available at http://www.issa.int/pdf/GA2004/2guidelines.pdf.
ISSA (2007), Public Scheme Reserve Funds: Helping Sustain PAYG Pensions: Survey Report, International Social Security Association, Geneva, Switzerland, available at http://www.issa.int/pdf/general/2Merida-Guidelines.pdf.
[43] Yermo op cit p.141

4.14   Investment performance and operational cost and efficiency of the fund should be benchmarked against international comparators and close equivalents in the private sector. The Board would be accountable for its performance against these benchmarks. An important question is accountability to whom? To what extent should the general public be given a sense of interest or ownership of the fund or to what extent should it remain a remote technocratic institution? Evidently, there should be accountability to elected politicians. It is an open question whether that should be to the government of the day or to the National Assembly, representing the nation. However, there is scope for encouraging more direct public involvement. The fund's AGM could be open to all taxpayers, for example, with an ability to ask questions and take part in advisory votes. There is a wide range of practice when it comes to publishing details of the fund's operation. The most open is the New Zealand Superannuation fund which publishes CEO expenses and investment performance on a monthly basis[44]. Publishing investment performance at such a high frequency however could encourage short-termism.   Publication of everything twice a year is probably ideal, though quarterly reporting is possible.

4.15   Ted Truman, formerly of the U.S. Federal Reserve, developed a scorecard for sovereign wealth funds to rank them by transparency and accountability[45]. A particular aspect of openness is how trustees are appointed, who is eligible to serve and how public the process of appointment is.   The government should at least publish the fund and trustees' terms of reference and the method of appointment of trustees. Evidently a majority of the trustees should be people with experience and proven competence in different aspects of fund management. The possibility exists, however of a couple of people's representatives on the board of trustees. These could be open to any member of the public subject to a selection process. There could be also an element of direct election in the process.

4.16   One issue that has recurred repeatedly whenever public investment funds are under consideration is that of ethical investment. Both Norwegian and New Zealand funds ran into controversy over some of their investments, as did Australia's Future Fund. If investments occur in things that citizens regard as reprehensible, such as tobacco or certain armaments, public controversy becomes inevitable. The scope of ethical restrictions on permissible investments is a topic which is suitable to public discussion and input. Ethical or moral judgements are pre-eminently a matter for democratic decision. The broader the discussion, the less likely is the fund to be hamstrung by an accumulating number of restrictions promoted by particular interest groups. Restrictions would then apply only to those things that offend a broad swath of public opinion, though as time went by the set of restrictions would have to be kept under review and might well evolve.

4.17   We have estimated governance costs at some £620,000 to £1 million by a top-down procedure. That would be consistent with having a part-time Board of perhaps eight, each paid a stipend with a full-time secretarial staff of two. An executive team of four or five would manage the fund with actuarial and research or technical support provided on contract, the whole costing £1 – 2 million. These costs could rise with an extensive effort at raising public awareness and engagement. The

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[44] See Cummine op cit ch.7
[45] Truman E (2010) Sovereign Wealth Funds: Threat or Salvation?" Peterson Institute for International Economics, Washington DC. See also Cummine op cit Appendix 3

costs are deliberately set low since there is a very wide variation in the costs of public investment institutions and no clear correlation between costs and returns.

4.18   To summarise, the Welsh Government would legislate to set up a fund and the law would:

- define the overarching objectives of the fund;
- establish clear roles and responsibilities to ensure the fund is run transparently and accountably;
- set out the structure of the fund to ensure the operational independence of the fund's management, including the role and powers of the Board and the management agency, and how they relate to the government and other bodies representing the public;
- define the duty to distribute the fund's returns and how and by whom that process will be decided;
- set a general obligation for the fund to invest ethically, involving potential restrictions on admissible investments; and
- establish the rights of the public to have access to the fund's published records, admission to its AGM and to be consulted on ethical restrictions on investment.

Investment management

4.19   I suppose that since the fund would be a public body, its investment returns would not be subject to tax. Any such tax would be a transfer from the Welsh Government to the UK and would call into question existing revenue-sharing arrangements.   Tax-free status   is extremely important if investment returns are to be adequate to the fund's purposes. Private insurance funds are subject to tax and to extensive EU regulation under the Solvency II system. Since the Welsh fund would not be private and its liabilities would be backed by the general government budget and the ability to increase taxes, it should not fall under the same regulations. To the extent that the regulations embody good practice for an insurance fund, however, they could be mimicked in running the public fund. There are three pillars to the regulation. The first establishes quantitative ratios for risked-based capital reserves relative to liabilities, the second established qualitative requirements for governance, including risk management and a supervisory review process, the third covers reporting and disclosure requirements[46].   Some of the provisions under pillars two and three could usefully be adopted by the fund.

4.20   Governance covers: risk management, internal controls, internal audit and the actuarial function. Each of these functions would exist within the management structures of a public fund.   The actuarial function normally considers the contractual liabilities of the fund and assesses the probable outgoings of the fund in view of those liabilities. In the case of a public fund, however, the liabilities would be set by the planned outgoings from the fund determined by a public plan for the support of old-age care. This could run for fifteen years into the future and be revised on a rolling basis, perhaps every three years. Revisions to the plan would be a matter for politicians but they would be required by legislation to justify their decisions publicly, with supporting evidence. Investments

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[46] Solvency II 2016, Institute and Faculty of Actuaries

would then be tailored to be compatible with planned outgoings. Assets and liabilities would be matched in terms of time period so that cash was available to meet outgoings at the time planned.

4.21   Risk management would keep the asset/liability matching under review and control liquidity and concentration risk.

4.22   Permissible assets would include tradeable securities like government and corporate bonds and equities and certain illiquid assets with a high expected rate of return. This is not the place to set out an investment strategy for a hypothetical fund but to indicate the sort of returns that might reasonably be expected given a prudent approach to risk and the need for diversification. While insurance and pension funds invest in government bonds in the belief that these are less risky, in practice confining investments to government bonds would not be an adequate investment strategy. Current government bond yields are low, in the UK both 10-year and 30-year government bonds yield below 2 per cent. US 30-year bonds yield just over 3 per cent but since they are denominated in dollars they carry currency risk. In practice equity investment would be required to reach returns of 4 or 5 per cent in real terms.

4.23   One classic study of long run equity returns was "The Triumph of the Optimists" by Dimson, Marsh and Staunton, first published in 2002[47]. It studies 16 markets from 1900 to 2000. Overall, adjusted for inflation US stocks returned an average 6.3 per cent a year, better than other classes of security. Large losses could occur from time to time, such as the back-to-back losses of -28 percent and -44 percent in 1930 and 1931, or the 10 years from 1970 to 1979 when stocks hardly budged while the dollar lost 28 percent of its purchasing power. Acknowledging that US returns are unusually high, the authors use a World Index, composed of 16 countries weighted by GDP; the geometric mean real return was 5.4%, the arithmetic mean 6.8%, the standard deviation 17.2%.

4.24   The authors point out that some countries have experienced bad returns over a 20 year interval. For example in Japan 22% of all (overlapping) 20 year intervals have negative real returns. In fact a negative 20 year return exists for 11 of the countries in the sample, contrary to the myth that you can never lose money over 20 years. They believe that 20th century equity returns are unlikely to be repeated, there being one-off advances in equity valuations and they project future real equity returns of 5% a year. This is 0.4% below the observed 5.4 mean of the 16 countries.

4.25   In subsequent work[48] the authors found that pension fund managers were generally assuming too high returns from equity holdings: 12.5 per cent nominal or 10 per cent real. They commented: "In this article, we show that, historically, annualized long-run equity returns have not been as high as 10 percent in real terms anywhere in the world. Over the past 103 years, a more typical figure has been 4-6 percent. Furthermore, a careful analysis of historical returns indicates that future risk premiums are likely to be lower than in the past."[49]

4.26   These very long-run projections of equity returns do not tell the whole story. At a time when equity valuations are very low, future returns can be higher and the converse is true. Currently equity

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[47] Elroy Dimson, Paul Marsh and Mike Staunton (2002) "The Triumph of the Optimists" 102 years of global investment returns" Princeton University Press
[48] Elroy Dimson, Paul Marsh, and Mike Staunton, Irrational Optimism, Financial Analysts Journal, January/February 2004
[49] Dimson, Marsh and Staunton op cit.

valuations are regarded as quite high with Price/Earnings ratios somewhat above historical averages. That is not surprising at a time of low bond yields when future dividends are discounted at a lower rate than when interest rates are high. There is some dispute and uncertainty, therefore, about whether current equity prices represent substantial over-valuation. If they do, expected returns over the next decade or so might well be lower than historically. That situation could be reversed by 2020 if there is an equity bear market in the meantime.

Fig 6: Standard deviation of nominal annual returns
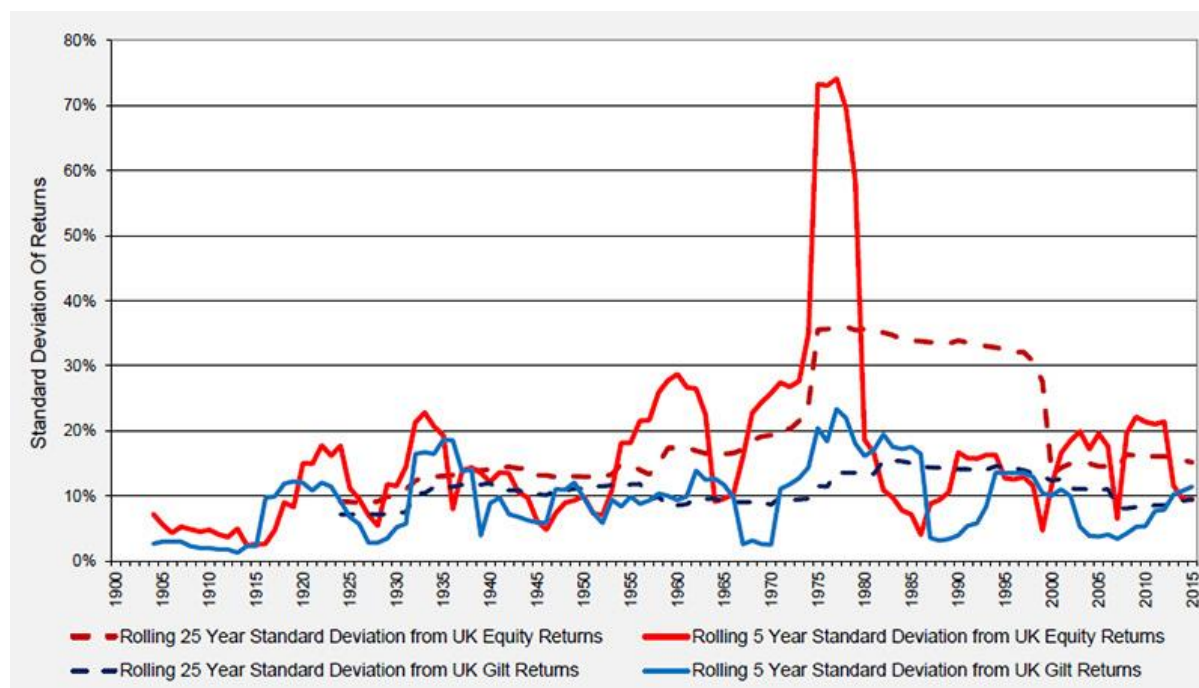
Source: Barclays/Courtiers

4.27   The chart above shows that the long run measures of standard deviation of nominal equity returns is heavily influenced by the high-inflation period of the 1970s, when returns fluctuated as never before or since. A rolling 25-year measure of standard deviation is currently around 15 per cent.

4.28   The fund, of course, would have other investment opportunities. These include property investment and other asset-backed investments. Where Welsh Government wishes to undertake infrastructure investment, for example, it could regard the fund as a source of mid to long-term finance so long as it was prepared to pay at least 5 per cent real return. This is high relative to current borrowing costs from the Public Works Loan Board but is reasonable compared with any PFI deal that might be contemplated.

4.29   Basic asset allocation decisions among different asset classes would be taken by the fund internally with the benefit of actuarial input that would be external. In order to decide on reasonable assumptions to make when simulating possible returns to the fund, we have to ask what a model portfolio might look like. Suppose a 15 per cent allocation were made to government bonds yielding 2 per cent per annum in nominal terms and zero in real terms, a 65 per cent allocation were made to

international equities with an expected total real return of 5 per cent p.a. and a 20 per cent allocation were made to asset-backed investments (like social housing or infrastructure) with an expected real return of 6 per cent[50]. Total returns from the diversified fund in that case would be expected to be around 4 ½ per cent. We assume conservatively equities have a standard deviation of real returns of 15 per cent p.a. and the illiquid or asset backed investments have a standard deviation of 20 per cent while bond returns in future have a standard deviation of 2.5 per cent (depending essentially on fluctuations in inflation). To estimate the standard deviation of a model portfolio we need to specify covariances for the three asset classes. In practice, these are not stable; we suppose equities and asset-backed investments have a correlation of 0.5 and both have zero correlation with real bond returns. That implies a model portfolio standard deviation of some 12 ¼per cent[51]. A return of 4 ½ per cent with a standard deviation of 12 ¼ per cent are the parameters we use for stochastic simulation in chapter five. In assuming that asset returns are normally distributed, we underestimate the risk of extreme events both good and bad, because in practice such returns show extreme outcomes more often than the normal distribution would imply. This is a general problem in risk assessment that this study does not tackle.

4.30   It is common, though not universal, practice for pension funds, having made allocation decisions to out-source parts of their portfolio to professional managers. However, it is not always cost-effective to do so, particularly when the fund is relatively small, since external managers will typically levy management charges that detract materially from returns. Moreover, management selection is itself an art since, by definition, not all managers can beat the market index. The average active manager underperforms the index to the extent of his or her fees. One solution is to invest passively where the fund manager simply matches a market index and will typically charge an institution 10 basis points (a tenth of one percent) for doing so. Nor does the index have to be a standard capitalisation-weighted index. Other weightings are possible. Equal weighting puts more emphasis on smaller companies that tend to grow faster while other, tailored weightings are possible – collectively known in the market as "smart beta" investing. For example, one strategy would be to weight companies by the size of their dividend payments corrected for some measure of balance sheet strength and for how well the dividends are covered by earnings. The portfolio would then be weighted to high-quality dividend paying stocks. Historically dividends have been the major part of overall total stock returns in the UK market[52]. Such an allocation could underperform a frothy market but a steady dividend stream would mean the fund was better placed to meet its liabilities

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[50] In practice asset allocation would change over time. Initially, as revenue flows greatly exceeded outgoings and would do so for some years, investment could be exclusively in equities or assets designed to maximise returns. As outgoings grew in line with the spending plan, it would be necessary to allocate funds to bonds of appropriate maturity to ensure cash was available when required. A study of dynamic asset allocation would be necessary to implement such a fund but is beyond the scope of this study.

[51] The standard deviation is the square root of variance, which in the three asset case is:
$(w1*s1)^2+(w2*s2)^2+(w3*s3)^2+(2*w1*w2*p12*s1*s2)+(2*w1*w3*p13*s1*s3)+(2*w2*w3*p23*s2*s3)$, where w is the weight in the portfolio of each asset indicated by numbers 1 to 3, s is the standard deviation of each asset and p is the correlation of pairs of assets indicated by the two following numbers. This formula assumes that asset returns are normally distributed. In practice asset returns have higher kurtosis, fatter tails, than the normal distribution so the risk of extreme events is understated.

[52] See recent article by GAM investments: The importance of dividends. https://www.gam.com/en/insights-content/2017/investment-opinions/the-importance-of-dividends/

even in periods when the stock market fell or failed to appreciate. Values would not escape stock market fluctuations, however.

4.31 Finally, financial instruments known as derivatives, which derive their value from an underlying security or basket of securities, have acquired a poor reputation among the general public. They are widely regarded as being complicated and therefore opaque. Their use has been blamed for market volatility or crashes. However, derivatives are a broad class, as varied in characteristics as individual equities. Some are much less complicated than others. It would not be appropriate to deny their use to a contemporary fund through some blanket injunction. Like other investments, derivatives can be used for speculative purposes or to reduce risk. In the latter function, they have role in the prudent management of a contemporary fund, given the necessary competence on the part of the manager. Pension funds, for example, often use derivatives to match the time profile of assets returns to that of expected liabilities. They would be similarly useful in helping to ensure the fund could meet planned cash requirements with as little effect on returns as possible. We now proceed to simulate the operation of a fund with the sort of investment returns discussed above and the funding requirements for social care set out in chapter one.

V. Calculating how the spending gap can be bridged

5.1   The spending gap to 2040 on different assumptions was set out in chapter one. Here we use the population projections by age cohort to project a tax base for the social care levy. We take the historical activity rate of different age cohorts and apply it to the projections to obtain a projection of the economically active population by age cohort. Historical activity rates have not been entirely stable as Figure 7 shows, although variations have been no more than 3 percentage points.

Fig 7: Proportion of population over 16 that is economically active

Source: ONS labour force survey: economically active Wales
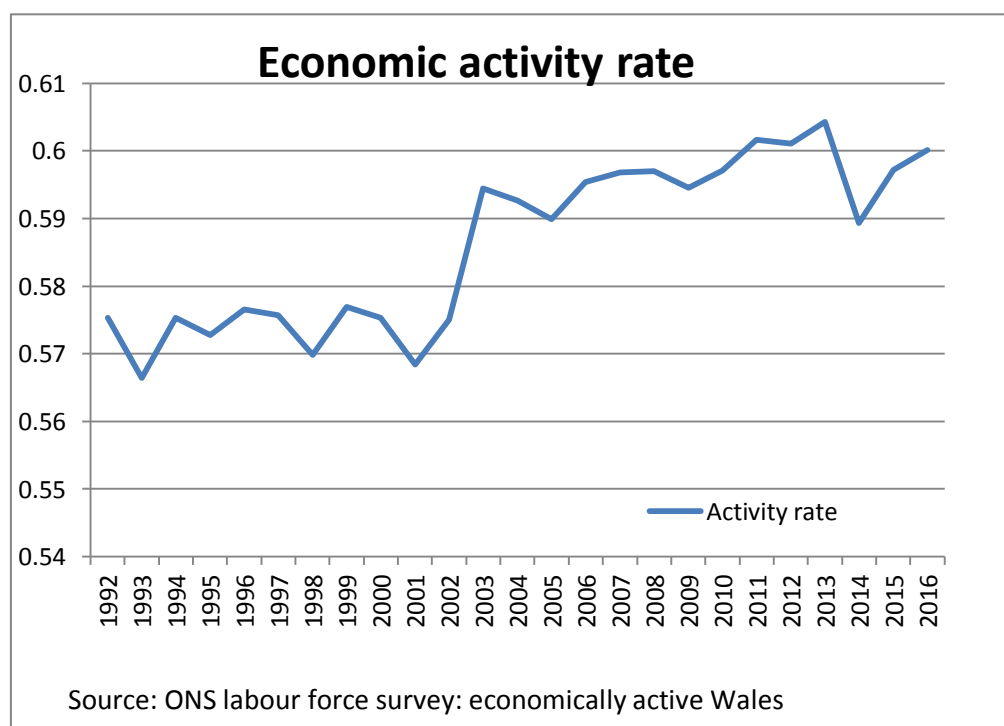
5.2   There has been a tendency for the overall activity rate to rise historically.   The trend is not extrapolated; we assume the most recent figures for 2017 will be maintained.   Current unemployment was distributed by age cohort using UK data on claimants by age group and that ratio was used to project the employed population by age group.

5.3   Employment and self-employment income for Wales were taken from HMRC's Household Survey for 2015-16 and adjusted to reflect income liable to basic rate tax[53]. That number was projected for 2016-17 by inflating using the index for average earnings. UK data on the relative income of different age groups were used to estimate the income of different age groups in Wales given the overall average income for the country. That combination gave projections of the taxable income of different age groups in future years ignoring inflation and future wage growth. The assumption is that the rise of nominal wages and therefore this tax base will proceed at the same rate as the rise in care costs so both can be ignored and calculations made at 2016-17 prices. Evidently if care home

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[53] See Annex on Data and Methods for more detail of the adjustment

costs rise more or less fast than wages, the spending gap will grow more or less than projected, implying different tax rates. Since there is a limit to the number of scenarios we can explore, the current assumption is retained until a reason emerges to think another assumption is more realistic.

5.4   Two sets of simulations were conducted. In one set we suppose there is a contributory scheme in place with age-cohort-related contributions and the scheme is funded – the so-called radical scheme. In another set of simulations we assume the scheme is financed by uniform increases in basic rate income tax and consider both funded and PAYG versions.

Radical Scheme Simulations

5.5   In the interests of intergenerational equity, it was argued in chapter two, section B that a levy should fall on different age cohorts at different rates as well as being related to income. In simulations we suppose that the levy begins at age 20 and continues to retirement at 67. In some, but not all, simulations, the rate of levy is determined by a person's age cohort on entering the scheme and is fixed thereafter.

5.6   For example, consider a scheme like Table 6 where people who are aged 20-30 when the scheme starts pay 1 per cent, older age cohorts pay progressively more until at age cohort 55-67 a maximum rate of 3 per cent is reached. As time goes on and age cohorts retire the rate paid by older age groups will fall since they will be made up of later and later cohorts. Given that we have attempted to adjust average income to reflect liability to basic rate tax and have subtracted the personal tax threshold of £11,500 from income, these rates are broadly consistent with implementing the levy as a rise in the basic rate of income tax, albeit with the rise being different for different age cohorts.
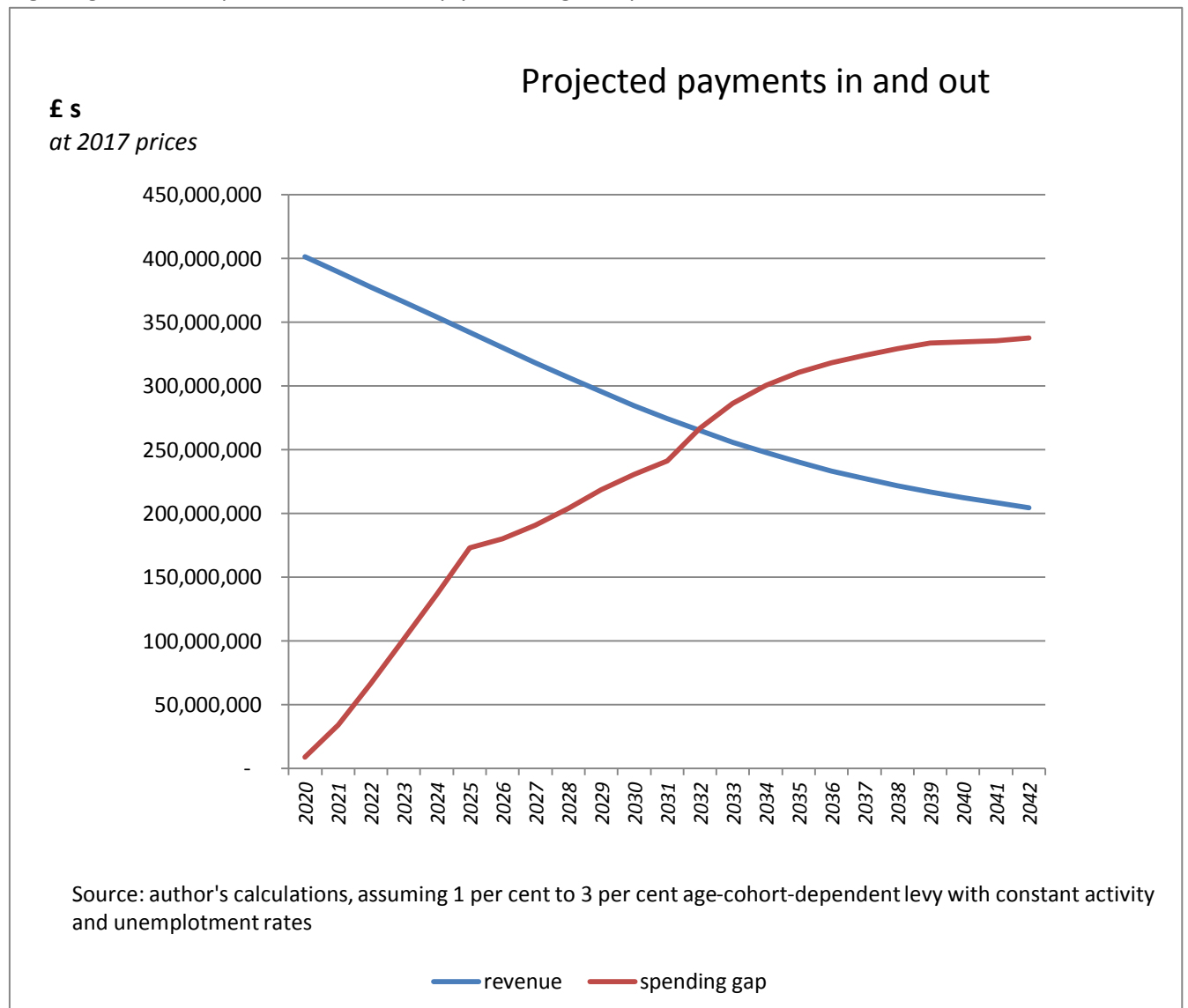
Table 6: An example of age cohort related tax rates

2020	2021	2026	2031	2036	2041	
cohort payment projection matrix: tax rates						
0.000	0.000	0.000	0.000	0.000	0.000	Age 15-19
0.010	0.010	0.010	0.010	0.010	0.010	Age 20-24
0.010	0.010	0.010	0.010	0.010	0.010	Age 25-29
0.011	0.010	0.010	0.010	0.010	0.010	Age 30-34
0.013	0.011	0.010	0.010	0.010	0.010	Age 35-39
0.016	0.013	0.011	0.010	0.010	0.010	Age 40-44
0.020	0.016	0.013	0.011	0.010	0.010	Age 45-49
0.027	0.020	0.016	0.013	0.011	0.010	Age 50-54
0.030	0.027	0.020	0.016	0.013	0.011	Age 55-59
0.030	0.030	0.027	0.020	0.016	0.013	Age 60-64
0.030	0.030	0.030	0.027	0.020	0.016	Age 65-69

5.7   Such a scheme has the consequence that with, fixed rates, total payments will decline over time as older age cohorts retire and cease to contribute. If the levy is made via basic rate income tax, earnings up to £11,500 are tax free. Ignoring increases in wages, for the reasons given, the above scheme would result in payments starting near £400 million a year and declining to about £200

million in 2041.

5.8   Yet as chapter one showed, the demand for social care services will rise over time as the population ages. At constant contribution rates, the time comes when revenue and spending demands cross. Figure 8 shows the course of the funding gap as determined in chapter one and the revenue implied by the tax projections in this chapter. The gap is determined by the estimated growth of demand for care services and the slower growth of the Welsh Government budget.

5.9   The question is: can the excess of revenue in the period up to 2030 be used to pay for the shortfall subsequently? If the excess revenue in the early years is invested in a fund created expressly for the purpose could it build up so that earnings from its investments covered the shortfall of revenues after 2030? And what combination of investment returns and tax rates would make for a viable fund that could continue indefinitely? Because investment returns are inherently uncertain we address these questions taking investment uncertainty into account through stochastic simulations. These enable us to test the sensitivity of results to different assumptions as well as different policy variables like tax rates while allowing investment returns to be uncertain, as they are in reality.

Fig 8: Age-cohort dependent tax rates imply declining receipts

Source: author's calculations, assuming 1 per cent to 3 per cent age-cohort-dependent levy with constant activity and unemplotment rates

5.10   A stochastic simulation was conducted using the revenue projections derived from the rates of levy specified and assuming the fund paid out the sums in the spending gap derived in chapter one and shown in Figure 8.   However, for the radical scheme we have to subtract collection and administration costs from the revenue collected. We have tentatively assumed annual administration costs of £16 million, which becomes some £18.5 million with oversight and governance costs and fund management costs.[54] To avoid an impression of spurious precision, we have subtracted a round £20 million.

5.11   Following the analysis in chapter four, the fund was supposed to have an expected annual investment return of 4 ½ per cent but with a standard deviation of 12 ¼ per cent. We further assume that 10 per cent of the fund's investments are in socially useful infrastructure in Wales. Results are in Table 7.

Table 7: Radical scheme

£ millions

| Simulation results	average	minimum	maximum
fund value 2041	3,592	-201	32,533
investment	556	141	3,427
discounted cumulative investment	263	55	1357
discounted terminal fund value	1057	-59	7620
cumulative spend	-3,267	-3,267	-3,267
fund value 2035	3,402	464	13,544

5.12   Given the revenue and outgoings, which are treated as definite, variations are owing entirely to different investment returns.   The simulation ran 10,000 times and the average, minimum and maximum values are shown. Discounted values are, perhaps, of less importance. They reflect a real discount rate set at 6 per cent, comfortably above the 3.5 per cent that HM Treasury recommends when assessing public projects.

5.13   Basically, the tax rates hypothesised would be expected do the job of financing the estimated social care gap. The fund reaches an average value £3.4 billion by the mid 2030s and somewhat more at the end of that decade. That permits a cumulative investment in Welsh infrastructure over 20 years of some £550 million, while over the same period some £3 ¼ billion is contributed to social care. If investment returns continue to average 4 ½ percent, a £3.6 billion fund would generate annual income of £160 million. Revenue from the social care levy would continue to generate about £200 million in the long run when all tax rates had fallen to 1 per cent. The system would therefore support an annual contribution of some £360 million to social care after the 2040s.

5.14   Investment uncertainty is reflected in the huge range of results. In the worst case the fund will have

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[54] See chapter 2I section C for justification of administrative costs. Investment management costs must be restrained, as discussed in chapter 4.

shrunk back to £464 million by 2035 so the system would become pay as you go soon thereafter. In the best case the fund would have reached a massive £32 billion by 2041. In that case, of course, the tax could be rescinded completely; the fund investment income would finance all social care on its own. While the range is wide, however, these extreme outcomes are very unlikely indeed. Figure 9 shows a histogram of results for the fund value in 2035. The size of the fund is on the bottom axis and the number of simulations in which that size occurred is shown on the vertical axis.

5.15   Of the 10,000 simulations, 82 per cent per cent, produced a fund size between £2.1 billion and £4.9 billion in 2035. The chances of a tax-cutting bonanza are very small. There was only a 4 per cent chance that the fund could be £1.4 billion or less implying it would be exhausted later in the decade and tax rates would probably have to be raised or conditions of access to supported care made more difficult. Although investment returns are assumed to be normally distributed and so symmetrical (which in practice they seldom are) the projected fund size has a skew because it results from the combination of net inflows (tax receipts minus outgoing) and the accumulation of investment returns.

Fig 9: Probability of different fund sizes 2035
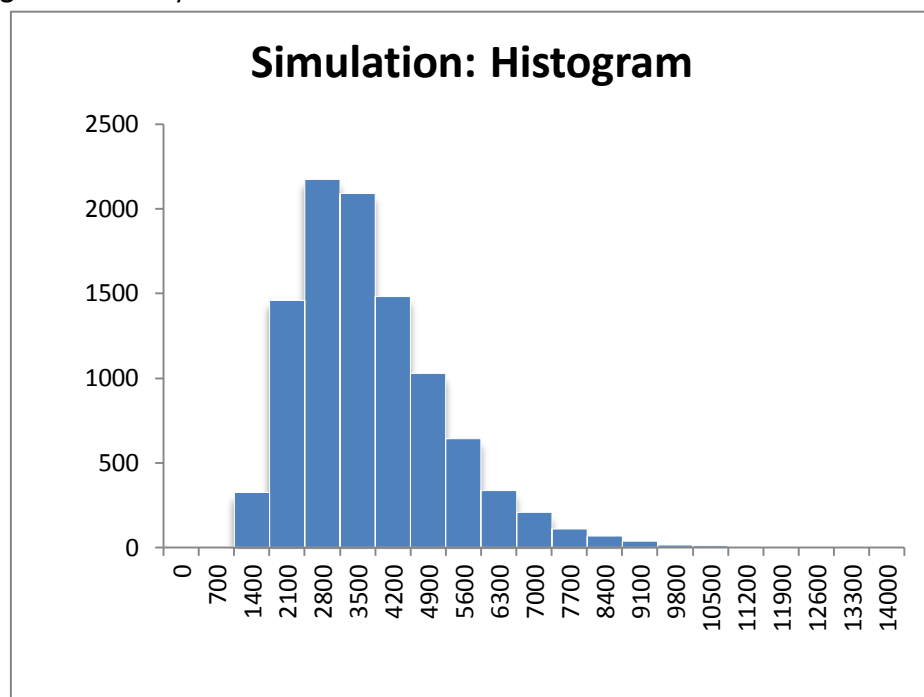
5.16   Apart from investment returns, there are a number of significant variables which could take different values and substantially change the outlook. Some are variables that could be changed by a policy decision. They include:

- the rate of tax levied
- the size of the uplift in care spending per head that is targeted
- administration and collection costs

Consider those in reverse order. If administration costs were doubled, the expected fund value in 2035 would be just under £3 billion and slightly smaller in 2041, i.e. it would be falling, not growing. In the worst case the fund would be down to £429 million in 2035 and would run out within another

year or two. There would be less than a 5 per cent chance that the fund would be below £1 billion in 2035, implying it would surely run out by the early 2040s.

5.17   Our initial assumption was that a 20 per cent increase in spending per head was attained by 2025. If it was decided to reduce the uplift to 14 per cent the expected size of the fund in 2035 would be 20 per cent bigger at some £4.1 billion than it was in Table 7; it would be £4.9 billion in 2041. The chances of long-term sustainability in this case are very good. The cumulative spend on care over 20 years is, though, reduced to £2.6 billion from £3 ¼ billion.

Table 8: Simulating a 14 per cent increase in spending per head.

Simulation results	average	minimum	maximum
£ millions			
fund value 2041	4913	421	29830
investment	698	177	3195
discounted cumulative investment	328	97	1328
discounted terminal fund value	1445	124	7306
cumulative spend	-2645	-2645	-2645
fund value 2035	4141	820	14625

5.18   Tax rates have an obvious effect on the fund; the higher they are the bigger the fund gets. Suppose that the rates in our original simulation were politically unacceptable and the starting rate at age 20 was halved to 0.5 per cent. That would reduce rates for all cohorts up to age 60. With administrative costs of £20 million and an uplift in spending per head confined to 14 per cent the situation would be as in Table 9.

Table 9: tax rates start at 0.5 per cent

Simulation results	average	minimum	maximum
£ millions			
fund value 2041	-225	-2346	7508
investment	156	54	864
discounted cumulative investment	42	-69	420
discounted terminal fund value	-66	-690	2436
cumulative spend	-2645	-2645	-2645
fund value 2035	768	-418	6765

Those tax rates do not work. The central expectation is that the fund would be under £1 billion in 2035 and would run out a couple of years thereafter. The chances the fund could reach the level where it would be sustainable indefinitely are negligible at about 1 per cent. Younger tax payers pay less tax but derive no benefit from these lower rates because there is no fund to assist them when they are likely to come to need it. It seems probable that 1 per cent is a minimum starting tax rate for a viable scheme of age-cohort related taxes.

Straight tax simulations

5.19   If social care is funded by a simple increase in basic rate income tax, all cohorts pay the same rate. That means tax revenues do not tend to fall over time as older age cohorts retire. Of course, it could be argued that such a situation is unfair on younger cohorts who must pay in longer. (It might be possible to compensate younger age cohorts to some extent if pay-outs were scheduled to rise over time). Another consequence of using a simple income tax is that the administration costs of running a contributory system with age-dependent tax rates are not incurred. Fund management costs may or may not be incurred depending on whether the system is PAYG or not. In an initial simulation we suppose there is still a fund and follow its evolution. The financial effects of a constant tax revenue and much lower administration costs is shown in Table 10.

Table 10: Fund supplied by basic-rate tax increase of 2 per cent

£ millions

Simulation results	average	minimum	maximum
fund value 2041	6784	1324	36822
investment	894	241	3696
discounted cumulative investment	413	136	1470
discounted terminal fund value	1995	389	9702
cumulative spend	-3267	-3267	-3267
fund value 2035	4967	1337	20674

5.20   Even in the worst case the fund exceeds £1.3 billion and the expected value in 2035 is almost £5 billion. Moreover it continues to rise to almost £7 billion in 2041. This would not only meet social care need but would give Wales a growing fund with some £900 million of investments in Wales possible over two decades. The downsides are generational unfairness and a general rise in tax. It would be possible either to reduce the tax or schedule increased pay-outs for social care from 2030 onwards so younger contributors got more for their money. We consider those options in reverse order. In the next simulation we leave tax rates alone but systematically increase disbursements after 2030 by 2.1 per cent a year, the rate required for several decades to compensate younger tax payers for their longer period of contribution before they reach the usual care age. Results in Table 11 are little affected by 2035 but begin to show in 2041 when the fund is over £500 million smaller.

Table 11: Basic rate tax plus escalating payouts after 2030

£millions

Simulation results	average	minimum	maximum
fund value 2041	6240	873	35008
investment	840	229	3501
discounted cumulative investment	390	115	1436
discounted terminal fund value	1835	257	9697
cumulative spend	-3406	-3406	-3406
fund value 2035	4874	1265	19463

This is a viable approach but its credibility depends on taxpayers believing that a promise made now about payouts in the 2030s will be kept.

5.21   The results of both simulations appear comfortable enough that tax rates could be reduced. Hiking the basic rate by 1 per cent would not lead to a viable fund. The fund would probably be under £500 million in 2035 and the system would become pay as you go. A rate increase of 1.5 per cent, however, produces a viable result (Table 12).

Table 12: Basic rate tax increase of 1.5 per cent with escalating payouts

£ millions

Simulation results	average	minimum	maximum
fund value 2041	2743	-227	19375
investment	425	119	1965
discounted cumulative investment	200	42	806
discounted terminal fund value	807	-67	4629
cumulative spend	-3406	-3406	-3406
fund value 2035	2683	431	9918

The fund reaches £2.7 billion in 2035 and is broadly stable to 2041. It would not last indefinitely if pay-outs were escalating but could contribute a steady £123 million. Either the fund would run down, or the government would pay more from the general budget after 2040 to keep the care promise. In this case the smaller fund results in less investment in Welsh projects - £425 million over two decades.

Pay as you go

5.22   Finally what would pay as you go look like? We suppose the Welsh Government raises basic rate income tax by an initial halfpenny in the pound. It is assumed that the schedule of disbursements is the same, namely the "gap" identified in chapter one. The government is assumed to run a buffer fund, invested in cash or gilt-edged securities with a zero real return and this fund is not allowed to go into the red, i.e. the Welsh Government does not borrow to finance care. This leads to a jerky course for tax rates that could be smoothed in practice. Nonetheless the course is instructive. Supposing the

tax raise begins in 2020, the half per cent increase would finance care for some years until the buffer fund went into the red in 2026. It would then be necessary to increase the tax increase to 1 ½ per cent. The buffer goes negative again in 2039 when rates must be raised to 2 per cent. We did not explore the further future.

5.23   The PAYG option may well look attractive to a government minister since the initial tax increase is smaller and the next increase is five or six years away, when he or she may no longer be in office. Moreover the subsequent increase could be twelve or thirteen years after that, the remote future by political standards. In any case, the tax payer will spend most of the two decades after 2020 paying extra income tax at 1 ½ per cent to finance care. In the PAYG case, total undiscounted payments will amount to £5 billion. In the case where a rate of 1 ½ per cent was imposed immediately total payment to 2040 would be slightly higher at £5.4 billion. (If we considered subsequent decades payments to the funded scheme would fall below PAYG payments). In the funded case there would be a fund in existence with an expected size, as we have seen, of £2.7 billion and that could include investments in the Welsh economy of over £400 million, which otherwise would require borrowing outside Wales.

VI.   Conclusions

6.1   Subject to the proviso that reasonable collection and administration costs can be negotiated and that income in the fund does not attract tax, it appears that a funded contributory scheme could provide a viable solution to the problem of funding social care in an era of demographic change. On moderate assumptions about mean fund returns and about volatility of returns, initial age-cohort related tax rates of 1 to 3 per cent, declining over time to 1 per cent could almost certainly support a 20 per cent increase in care spending per head and the effects of population ageing, at least to 2040. The chances of a failure and a consequent need to raise tax rates exist but are small. The fund should see Wales through the demographic deterioration of the 2030s and into the 2040s. The chances of the fund reaching critical mass so as to be self-sustaining indefinitely are fairly good on these assumptions. Wales would then have, in effect, its own community fund, like the sovereign wealth funds of other countries, albeit on a much smaller scale. In any event the fund could finance sound investments in Wales to the extent of several hundred million pounds over the next twenty years.

6.2   A funded scheme would also be viable with a flat rate tax increase of 2 per cent and the promise to escalate disbursements on social care after 2030, in the interests if inter-generational equity. In fact the fund would be larger in those circumstances through to 2041, though it would subsequently come under pressure from continued escalation of disbursements, which strictly should continue until around 2060 to be fair to younger tax-payers. The smallest tax increase at which the funded scheme makes sense if rates are not dependent on age cohort is 1 ½ per cent, which results in a 2041 fund around £2.7 billion.

6.3   The profile of a pay as you go scheme is much more dependent on the desired profile of extra pay-outs for social care. Assuming the same "gap" for expenditure to be filled, the government could raise basic rate income tax by just half of one per cent in 2020 and that would do until about 2025/26 when the rate increase would need to go to 1 ½ per cent. That in turn would be adequate until around 2039 when an increase to 2 per cent would be required.

6.4   It seems that a tax increase equivalent to a flat 1 ½ per cent on basic rate is needed to meet expected care costs. With PAYG that can be postponed for five or six years and a much lower rate imposed in the meantime, which obviously has political advantages. Taxpayers end up paying out much the same over two and a half decades as with a funded scheme, however, and the funded alternative results in a community fund of some £2.7 billion with several hundred million pounds investment in the Welsh economy. It also results in younger tax-payers shouldering a less heavy share of the burden.

G.H.Holtham
22:v:2018

Annex: Data and Methods

Data Used in Projections

Population by age group: https://statswales.gov.wales/Catalogue/Population-and-Migration/Population/Estimates/nationallevelpopulationestimates-by-year-age-ukcountry

Inactivity rate by age group:
https://www.ons.gov.uk/employmentandlabourmarket/peoplenotinwork/unemployment/datasets/regionalinactivitybyage

Unemployment:
https://www.ons.gov.uk/employmentandlabourmarket/peoplenotinwork/unemployment/timeseries/ycnm/lms

Claimant count by age group
https://www.ons.gov.uk/employmentandlabourmarket/peoplenotinwork/outofworkbenefits/datasets/cla02claimantcountbyagegroup:

Population projections:
https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections/datasets/tablea25principalprojectionwalespopulationinagegroups

Distribution of mean income and tax by age: HMRC Household Survey: 3.2 Distribution of median and mean income and tax by age range and gender, various years 2011-2016. 3.11 Income and tax by gender, region and country 2015-16.

Consumer Price Index: https://www.ons.gov.uk/search?q=consumer+price+index+time+series

Average Earnings:
https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/earningsandworkinghours/datasets/averageweeklyearnings

Numbers of adults over 65 receiving care 2016-17: https://statswales.gov.wales/Catalogue/Health-and-Social-Care/Social-Services/Adult-Services/Service-Provision/adultsreceivingservices-by-localauthority-clientcategory-agegroup
Ditto earlier years:
https://statswales.gov.wales/Catalogue/Health-and-Social-Care/Social-Services/Adult-Services/Service-Provision/Prior-to-April-2016/adultsreceivingservices-by-localauthority-clientcategory-age

Total spending on social care, people aged 65 and older : https://statswales.gov.wales/Catalogue/Local-Government/Finance/Revenue/Social-Services/social-services-socialservicesrevenueexpenditure-by-clientgroup

Disability rates:
Maria Guzman-Castillo et al., "Forecasted trends in disability and life expectancy in England and Wales up to 2025: a modelling study".
http://www.thelancet.com/journals/lanpub/article/PIIS2468-2667(17)30091-9/fulltext

Table 3, plus the observation "The age-specific disability prevalence between 2002 and 2013 in ELSA ranged from 14% in people aged 65–69 years to 57% in those aged 90 years and older (appendix p 26)."

Methods

First, we seek to make projections of the tax base by age group up to 2040. Second, we seek to make projections of the demand for social care expenditure to 2040. Together, these projections will permit us to assess what age-cohort-specific tax rates need to be applied to bridge the expected gap between expenditure demand and government resources.

1. Projecting the tax base

The base period for projections was October 2016-September 2017.

The economically active population, inactive population, labour force, employment and unemployment were obtained or calculated for that base period.

The inactivity rate by age group for July-September 2017 is available for the UK as a whole but the age cohorts are grouped differently from the age cohorts in population projections. The inactivity data were interpolated using a cubic spline procedure and then regrouped to match the age cohorts in population projections[55]. The interpolated series was checked to ensure the original cohort averages were respected.

The relative inactivity rate by cohort was assumed to be the same for Wales as the UK. It was applied to the Welsh population data for the base period to derive an economically active population by age cohort. The unemployed were subtracted from the economically active population to give a currently active population by age group. Unemployment by age cohort was obtained using the claimant count by age group data to distribute unemployment across age cohorts. These data are again available for the UK as a whole and it was assumed the distribution of claimants across age groups was the same in Wales as in all-UK. The currently active by age group series was re-normalised to ensure totals corresponded to the aggregate data for Wales. The ratio of this series to the total population was assumed to be parametric and used in projections.

Principal population projections by age group are available for many decades ahead. Projections were multiplied by the ratios of employed (currently active) people to total population to generate projections for employed labour force by age group.

An estimate of the basic rate tax base in the base period was obtained from data in HMRC's household survey. Data for Wales are available for 2015-16 showing income of different types for different income ranges. We consider only income from employment and self-employment.   Tax on income derived from capital is not devolved to Wales. We also ignore pension income. In principle pensions earned up to the age of 69 could be taxable but we have no data on pension income by cohort so pensions were ignored. We assume income from people earning below £50,000 is fully eligible for basic rate tax (apart from the basic

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[55] The spline interpolation routine as an add-in to Excel is available on:
https://www.scribd.com/document/267875213/CSpline2

personal allowance). For taxpayers above that level, only a portion is taxable at basic rate. We applied factors of 3/5,3/7/,3/10,3/15 and 3/20 respectively to income in the higher ranges to approximate liability to basic rate tax. This procedure gave an adjusted average income from employment and self-employment for Wales in 2015/16 of £23,660 compared with an unadjusted average of £26,830. The number for 2015-16 was then updated to 2016-17 using the average earnings data for the UK. That resulted in an increase of 3.8 percent to £24,565.

To estimate average earnings by age cohort, we use the income by age cohort which is available from HMRC for the UK. Once again, we assume relativities in Wales are similar to those for the UK as a whole. The relative incomes of different age cohorts have not been entirely stable between 2011 and 2016. The under 20s and those 50-64 have seen a material increase in share, while those aged 25-39 have seen a decline in share. There seemed no reason to extrapolate those trends so a weighted average was taken of the shares over the 2010/11 to 2015/16 period. Arbitrarily, a weight of 0.5 was given to the most recent period with antecedent weights declining by a factor of 0.51.   That gave the following weights: 0.5,0.26,0.13,0.07,0.03,0.02. The weights generated a set of numbers showing the ratio of the income of each age cohort to the national average.

The projections of the currently active population by age cohort were then multiplied by the income relativities and by the national average income to give taxable income by age cohort. Note that this procedure produces projections that ignore the growth in nominal incomes over time. The tax base changes only with the population and its age structure. The thinking is as follows. Demand for care expenditure is also projected at 2016-17 prices, ignoring any inflation in costs, so in effect we suppose that care costs, being largely wages, will inflate at the same rate as the tax base, itself dependent on wage incomes. We therefore ignore changes in wages and care costs, supposing they will cancel out.   Evidently other assumptions are possible.

The projections were not always made year by year.   The first years projected were 2020 and 2021, supposing that the levy would be introduced in one of those years. Projections were made for five year intervals, thereafter, i.e. for 2026, 2031 etc. Age groups in the projections are organised in sets of five years, eg 20-24, 25-29 so age-dependent tax rates can be set only for five-year cohorts. It takes five years for all the members of an age cohort to move to the next age group and therefore for the tax rate for that age group to become that of the cohort in question. Hence the use of projections every five years. Nonetheless, there is a problem in that in the official population projections the size of any arbitrary age group is not the same in general as that of the next age group up five years later – which would be the case if there were no deaths and no migration. Each age cohort is supposed to pay the same tax rate through its working life. To simulate that, we apply a given cohort's tax rate to successive age groups in succeeding five-year periods but because of the non-correspondence noted above, that will introduce an inaccuracy.

The official projections seem to imply net emigration but it is mainly in younger age groups. Migration appears to become broadly positive for those aged over 50.   The official projections have more people above 50 and fewer in the 20-40 age range than our synthetic projection. That could imply that contributors at a low rate are being partly replaced by contributors at a higher rate. Given the population as projected, we may be understating the average tax rate somewhat.

A sensitivity test was conducted as follows. A synthetic projection was made, rolling each age cohort forward from official projections for 2020. That resulted in a higher working age population overall than the official projection. Adjusting the synthetic projections equi-proportionally to give the same total population as in

official projections mimics a situation where net emigration is the same as in official projections but it no longer changes the age profile of the population. When we calculate revenues in that case it yields a decrease of some £67 million over two decades, a fall of 1 per cent. If the age profile shift that migration is actually projected to produce is worth 1 per cent on revenues, our simulation results would be improved but the differences are not significant. We conclude that this inaccuracy in our procedures is not a serious problem.

Figure A1
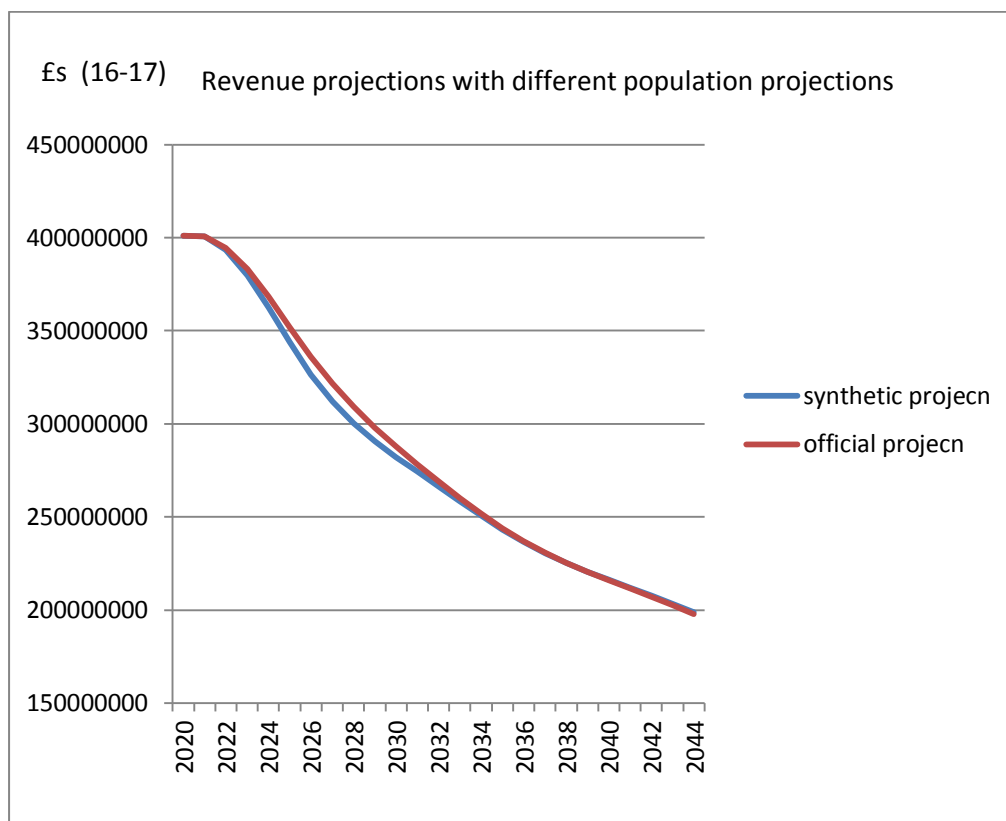
The method produces a tax base and, given a supposed tax rate, it can produce revenue projections at five-year intervals. Annual receipts are generated by a cubic spline interpolation.

N.B. For straight tax simulations with no differentiation of rate by age cohort, annual projections were made eliminating the need for interpolations.

2.   Projecting the demand for expenditure

We begin with initial expenditure in 2016-17 and assume no change in unit costs – for the reason given above - that is to be consistent with revenue projections. Demand will depend on the desired increase in spending per head and the increase in elderly people in need of care.

Spending on elderly social care 2007-8 to 2016-17 was deflated by the CPI deflator net of housing costs to derive spending at constant prices. This series was divided by numbers of over 65s receiving care (there is a break in series in 2016 so comparisons of 2014/15 and subsequent years are not meaningful). It was also divided by numbers of people over 65 in the population. A marked drop was observed in the latter series from 2007-8. The fall was taken as a measure of unsatisfied demand for care services.

Disability rates by age group were projected in the Guzman-Castillo et al study published in the Lancet. The study, dated 2015, projected rates to 2025. Rates within given cohorts were projected to be stable with only very small variations. The age-group-specific rates were applied to the Welsh population projections by age group for 2016-17 to estimate numbers with a disability. Some interpolation and regrouping was required to align age cohorts. Rates adopted are shown in Table A1.

Table A.1

Age	per cent with disability
65-69	14
70-74	19
75-79	23
80-84	26
85-90	30
90+	57

Numbers of over 65s receiving care in the StatsWales data are broken down into three groups: 65-74, 75-84 and over 85s. Those numbers receiving care were compared with the estimated numbers in each group with a disability. For the first two groups the ratios were 35 and 77 per cent respectively of people with a disability who receive care. For the over 85 group, the numbers receiving care were greater than those estimated to have a disability while the ratio to the entire population group was 65 per cent. Care numbers in future were estimated for the 65-84 group by using disability rates and proportions of those in care while those for the 85 plus group were estimated as a stable 65 per cent of the population cohort. The disability step is strictly redundant since care receivers could have been projected as a stable proportion of the age group. The method adopted allows explicit assumptions to be made about disability rates if required.

Total care spending for 2016-17 was assumed to increase at the rate of the estimated numbers of people receiving care plus an uplift in spending per head, assumed to be phased in over the period 2020-2025. This demand for care expenditure was then compared with projections of Local Authority spending on care, which was assumed to grow at 1 ½ per cent a year above care costs from 2017. The difference defined a care spending gap to be bridged by a new levy.