Comparing Pension Systems in the Circular Flow of Income

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Abstract
The neoliberal consensus is that state funded pensions are not sustainable in the long term, due to declining fertility and longevity. In response, policymakers have pointed to the advantages of privately funded pension systems. This article compares the social provisioning of these two systems using the circular flow of income as an organizing framework. A series of pitfalls in the private model are examined, including inequality of provision, mis-selling of investment products, and punitive charges.

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Introduction

Under the Washington consensus, market-based solutions have been sought in areas as diverse as education, health and social care. Individuals are encouraged to take responsibility for their own standard of living, health and financial security, and the main function of the state is to ensure that the right incentives are established in efficient markets. A key area of neoliberal dominance, which affects us all, is in the area of retirement planning. Individuals are encouraged to make private plans for their retirement, investing their savings, either directly or via their employer, into pension funds.

The critical thrust of this consensus is that state funded Pay-as-You-Go pensions are not sustainable in the long term, due to declining fertility and increasing longevity. Policymakers have argued, for example, that the pension age should increase since more retirees will be increasingly dependent on a smaller workforce, and this workforce will not be able to afford, or will be unwilling, to pay taxes to finance the pensions of the swollen cohorts of older population. It is also argued in the neoliberal approach that collecting less tax to pay for state pensions would create room for more individual savings, with the dual benefits of giving individuals a share in the means of production and generating more private investment and, therefore, growth.

In this article we compare state and private pension systems using the circular flow of income as an organising framework. As Toporowski (2000) has argued, this provides a way of examining the financial structures associated with phenomena such as pensions in a way that reflects reality: focusing on the key institutions that characterise mature capitalism. Instead of the neoclassical theoretical ideal of a rational agent, smoothing consumption over their life cycle, a systemic approach can be developed that focuses on the actual structure and interconnections between institutions. Developing the theme of this special issue, we examine the social provisioning of pensions: how pensions are organized by society, and in particular by key institutions such as the state and pension fund providers. The contribution of this article is to explore how the circular flow of income can be used to provide an overview of how pension systems work, and draw together some of the key issues. By looking at the circular flow as a whole, this approach generalises, for example, from insights into the relationship between pension funds and finance (Toporowski 2000), the way in which savers are mistreated (Sullivan 2004), the inequalities associated with funded systems (Ginn and Arber 1999) and the relationship between savings and demand (Cesaratto 2006).

The first part of the article will show how the circular flow can be used to compare state and funded pensions systems, with the UK as an exemplar, setting out the key neoliberal case for funded pensions. In the second part, we explore how the circular flow can be used to draw together important elements of a critique of funded pensions. A concluding part summarises the key issues suggested by this approach, and provides some suggestions for future empirical research.

Comparing State and Private Pension Systems

Common to all pension systems is the premise that most people retire after a substantial adult working life. The circular flow of income provides a way of capturing the importance of work by modelling the flow of wages from firms to

households, and the flow of consumption from households to firms. The key problem at the heart of any nation's pension system is how a flow of consumption, at or above subsistence, can be maintained when adults no longer work, and no longer receive wages from work.

To explore how pensions can be modelled using the circular flow of income, we have made the simplifying assumption that there are two types of household: worker households and retired households.

Pay As You Go Pension Systems in the Circular Flow

Figure 1 shows how the circular flow can be used for the case of the state Pay-As-You-Go (PAYG) Pension system. This has three main elements. First, wages flow from firms to working households, and return back to firms in the form of consumption payments. Second, government receives taxes and pension contributions (national insurance in the UK) from working households and firms. Finally, retired households receive their state pension payment from government, and this is used as a basis for consumption payments to firms. This is a state-run tax-based system, of the type introduced by Bismarck in Germany in 1889 and, as implemented in the UK following the 1942 Beveridge report, and still providing the core of social policy in the UK today.

Figure 1 Pay-As-You-Go Pension System
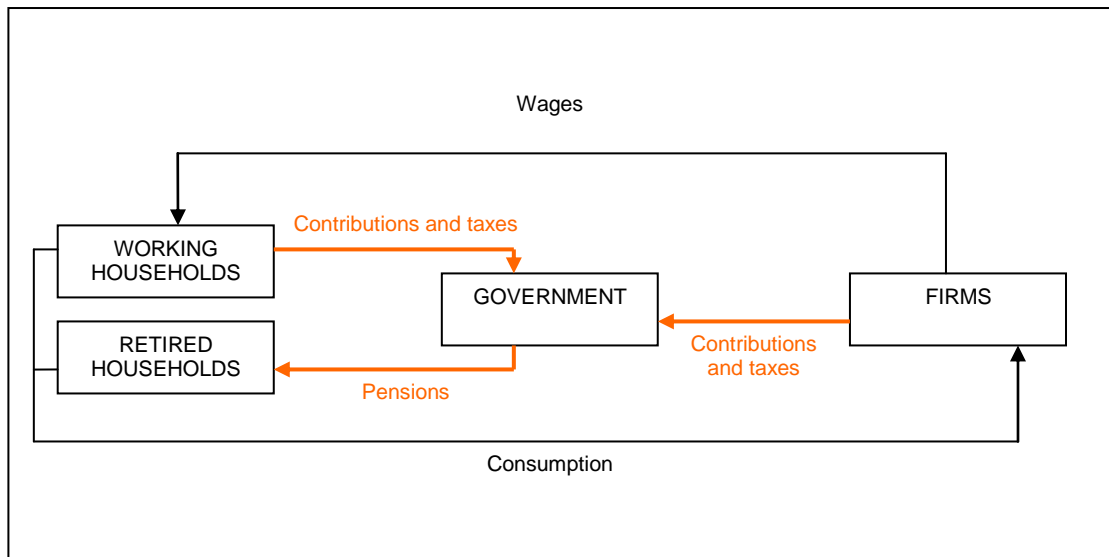
Source: Adapted from Trigg, 2010

In 2008, state PAYG pensions paid out to retired households amounted to 4.7 per cent of GDP, while national insurance contributions paid in by firms (employers) and working households (employees and the self-employed) totalled 7.6 per cent of GDP (Office for National Statistics 2010d). National insurance contributions go into a fund used to finance a range of state benefits covering not just retirement but also bereavement, incapacity to work and unemployment. While all these benefits are funded on a PAYG basis, the national insurance fund does not necessarily pay out

exactly the amount gathered in during any one year, so it may carry forward a surplus (or deficit). In 2008-9, retirement pensions accounted for 83 per cent of the money paid out of the national insurance fund (Government Actuary's Department 2010: 100).

State pension systems have come under increasing pressure in recent years. Most important has been the claim that demographic change, caused by households having fewer children and people living longer, is challenging the future viability of this classic PAYG model. As shown in Figure 2, across the world countries are facing declining support ratios (number of workers per retired person). For the world as a whole, the support ratio is set to decline from 9 today to 4 by 2050. In the developed nations the ratio is already low and set to decline further – for example, in Europe from 4 today to 2 by 2050.

It is argued that declining support ratios put pressure on PAYG pension provision – where current pensions are funded directly by current contributions and taxes from the current generation of workers and employers, or through government borrowing (which shifts costs to future generations). Fewer workers are available to support pensioners, and, unless government borrowing is increased, it follows from this perspective that PAYG pensions will become unaffordable and unsustainable.

Hence, the neoliberal stance has been to criticise state pension schemes. The World Bank, for example, while recognising that there is a place for PAYG in a 'multipillared' approach to retirement provision, has been a particularly strident and influential critic of PAYG schemes (see, for example,World Bank 1994: 334). In addition to being unsustainable in the face of falling support ratios, creating rising government deficits and unacceptable cost burdens for future generations, it is claimed that state schemes distort the labour market by creating a tax on jobs and so reduce output (Holzman and Hinz 2005: 24-34). From a neoliberal perspective the price mechanism should be allowed to function in efficient markets. Since wages are the price of labour, it follows that the labour market should be freed from the distortions generated by high taxes. Once wages are allowed to fluctuate free of tax distortions, demand and supply for labour can be brought into balance, ensuring low unemployment. The neoliberal view is that the environment for a healthy private market economy is the best solution to providing sufficient private resources for pension provision.

Figure 2 Support Ratios for Selected Countries and Regions
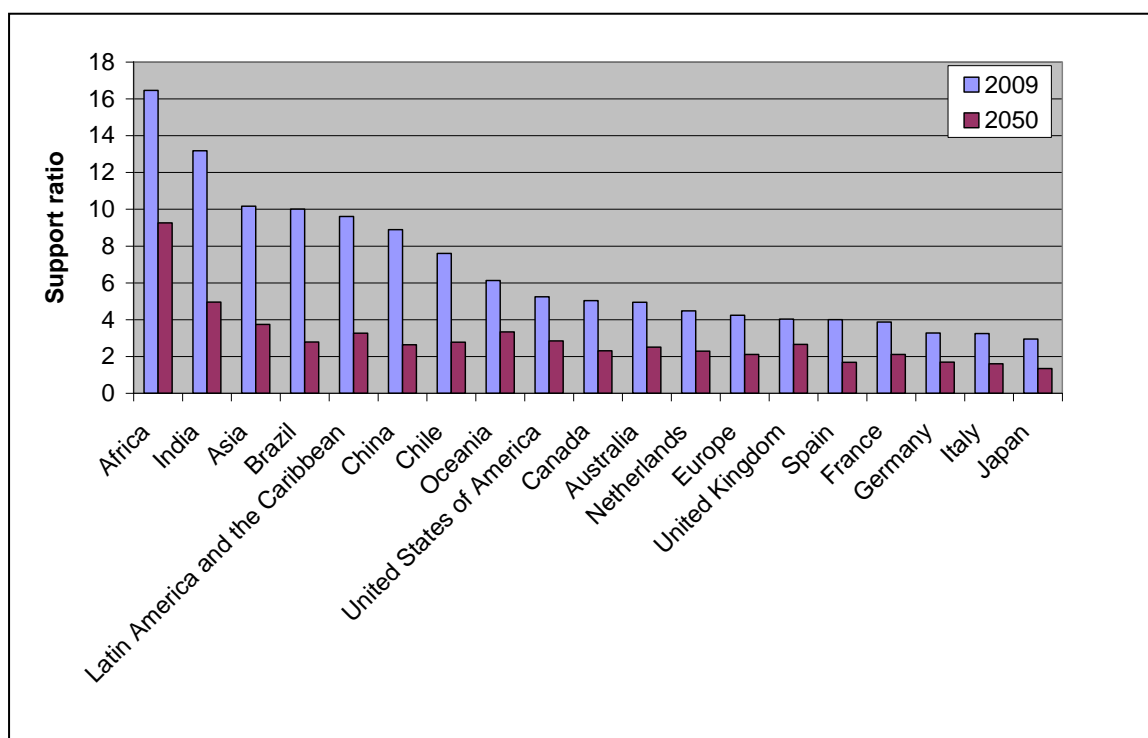
Data source: United Nations, 2009.

A further claim is that through the social legacy of their historical development, state schemes distort choices between work, lifelong education and retirement (Holzman and Hinz 2005: 24-34). In a free market, individuals would choose to work and retrain to maintain the marketability of their labour and make rational decisions about how much to save in order to smooth consumption and about when to retire. In the absence of any moral hazard, whereby the state bails out the non-savers, the incentive would be there for individuals to take responsibility for their retirements. And, crucial to the neoliberal proposition, a higher rate of saving would lead to more finance available for the private sector to carry out real investment. This is a supply-side approach in which investment is determined by savings. A rolling back of the state frees up resources for a potentially dynamic private sector and creates the extra growth needed to support the increasing demographic bulge in pensioners.

This neoliberal approach has been enthusiastically adopted throughout the world, with the most radical response in parts of Latin America. The state pension system in Chile, for example, has been radically overhauled by introducing individual funded pension accounts. In place of the state system, individuals were offered a selection of five portfolio accounts (Barr and Diamond 2008: 228). In the UK it has been a stated government aim to change the balance between state and private pensions. The UK Labour government's 1998 Green Paper stated:

Public spending on pensions will decline as a share of GDP, from 5.4 per cent to 4.5 per cent in 2050. By 2050, the proportion of pensioner incomes coming from the State, now 60 per cent, will have fallen to 40 per cent, and the proportion coming from private pension provision will have increased from 40 to 60 per cent. This will ensure that the pension system remains both fair and affordable. (Department of Social Security 1998: 8)

The UK government is in the process of implementing changes to contain the cost of state pensions, in particular raising first women's state pension age to align it with that of men and then raising the state pension age for all in stages to at least age 68. Some of the savings will be offset by recent improvements to state pensions, but it is salient to note that, as shown above, state retirement pensions accounted for only 4.7 per cent of GDP by 2008. This is already a significant drop from the 5.4 per cent mentioned in the quote above, achieved largely through a policy (now partially changed) of increasing state pensions in line with prices rather than earnings.

Funded Pension Systems in the Circular Flow

As shown in Figure 3, the private funded pension system is a seemingly diametric alternative to the state PAYG system. In this system, working households are free to choose whether to save their wages in pension funds for later use in retirement, or to spend them on current consumption. The pensions that retired households receive are determined in part by the size of their pension pots, determined by earlier individual saving decisions. Firms also contribute to pension funds, for example in the form of employer contributions to work-based schemes (which may, however, be thought of either as a subsidy from the employer or as deferred pay from the working household) and dividends paid on shares that are held by pension funds in firms. Though the neoliberal rhetoric calls for a purely market-based system, the state may play a role in encouraging private saving through tax reliefs, as shown in Figure 3.

Figure 3 Privately Funded Pension System
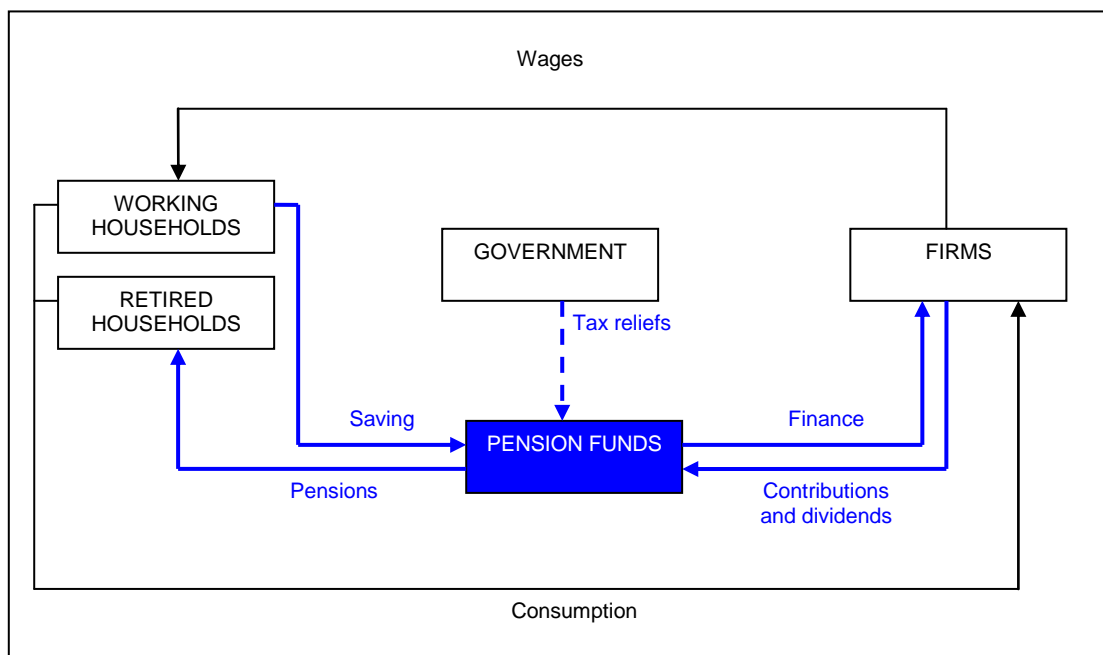
Source: Adapted from Trigg (2010)

In 2008, contributions by working households to work-related pension schemes, together with the investment returns, amounted to 3.6 per cent of GDP, contributions from firms were equal to 3.8 per cent of GDP, and benefits paid out amounted to 4.2 per cent of GDP (Office for National Statistics 2010d; Office for National Statistics 2010e). It is estimated that the net cost of tax reliefs (which is tax relief on contributions and pension fund investment returns less tax on pensions in payment) on all private pensions (work-related and individual personal pensions) came to around £27 billion or some 2.0 per cent of GDP (Office for National Statistics 2010e).

At first sight a funded pension system does not have any advantage over PAYG in terms of dealing with declining support ratios. The relative decline in the number of working households, leads either to lower contributions and taxes (Figure 1) or lower savings (Figure 3). Both systems require an inter-generational distribution from working to retired households. However, it is argued that the shift from a PAYG to a funded system does create a one-off step up in saving that promotes additional economic growth. Moreover, there are claimed advantages of the funded system which are based on the more efficient functioning of a market economy. Less tax reduces labour market distortions, more choice provides flexibility in the balance between working, lifelong education and retirement, and higher long term savings during the phase when funded pension savings are accumulating can promote deeper and more innovative securities markets that provide a boost to private sector investment (Holzman and Hinz 2005: 45-52). These claims of the economic benefits from funding are founded on the neoclassical concept that, in a full-employment economy, additional saving will translate into increased (real) investment, expanding the capital stock, increasing the capital-labour ratio and thus labour productivity and so fuelling economic growth.

Towards a Critique of Funded Pensions

Once we step away from the neoclassical lens, there are a host of arguments that can be levelled against funded pensions, including: their failure to channel savings into investment; their mistreatment of consumers; and their failure to prevent poverty in old age. Some of these arguments are brought together here using the circular flow of income as an organising framework.

The Pensions Context

However, as a first step, it is useful to consider how a funded system delivers a pension to the individual and thus identify the stages at which matters can potentially go awry. From the individual perspective, the success of a defined-contribution funded pension depends on the six risk factors summarised in Figure 4 and discussed below (adjusted for tax relief, as applicable). The additional issue of the security of savings institutions is then considered before we make use of the circular flow approach.

Figure 4   Risk Factors for individual outcomes in a funded pension scheme
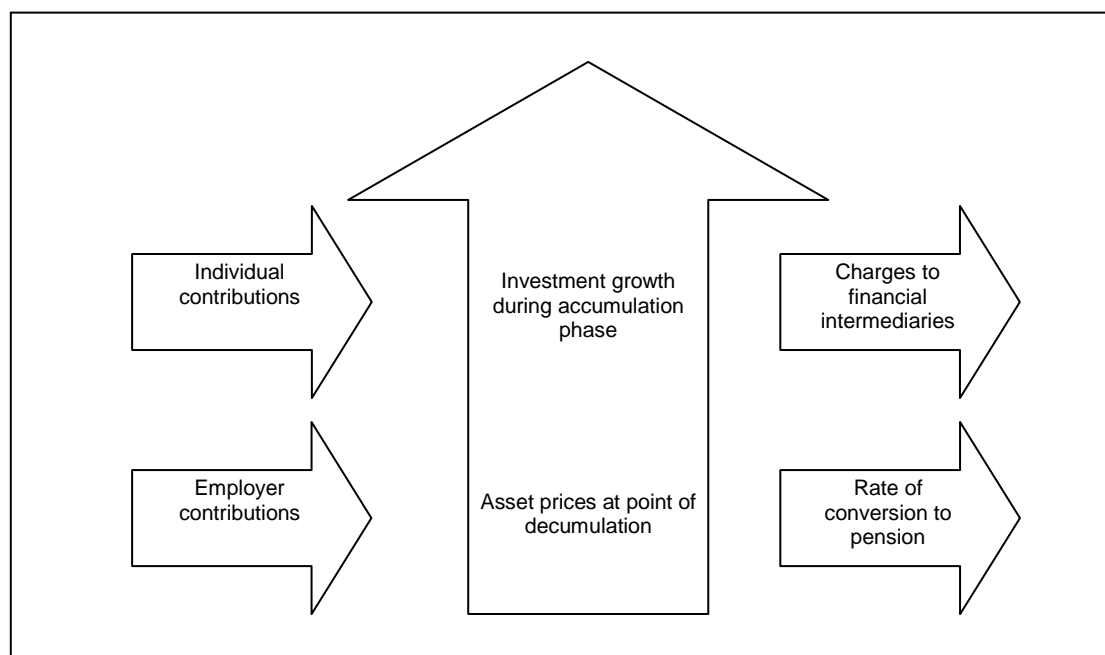

Individual Contributions

The amount an individual voluntarily contributes towards their pension depends on both willingness to save and ability to save. There is a substantial and growing literature on the behavioural factors, such as myopia and hyperbolic discounting, that may inhibit an individual's willingness to save (see, for example, Department of Work and Pensions 2009; Thaler and Sunstein 2008), and a range of policy initiatives are being adopted in an attempt to address these, such as the Save More Tomorrow scheme in the US (Thaler and Benartzi 2001) and automatic enrolment into pension schemes which is shortly to be introduced in the UK (Department of Work and Pensions 2011).

Less tractable are households that spend their working life close to subsistence, have very low ability to save, and may see very poor returns from any saving. Figure 5 displays average weekly household spending for the UK, in 2008, on life assurance and contributions to pension funds by gross income decile. The difference in the amount saved by the richest and the poorest households is nearly a hundred-fold and is a key reason why funded pension schemes contribute to inequality. Broadly, those who can afford to save more, do so and will tend to reap larger pensions as a result. By contrast, in a Beveridge-style PAYG system (with an emphasis on flat-rate rather than earnings-related pensions), those who can afford to pay in more do so, but receive broadly the same amount of pension as everyone else. So PAYG systems tend to be progressive and foster income redistribution. Funded schemes tend to be regressive, perpetuating income inequalities.

Figure 5 Pension contributions by gross income decile
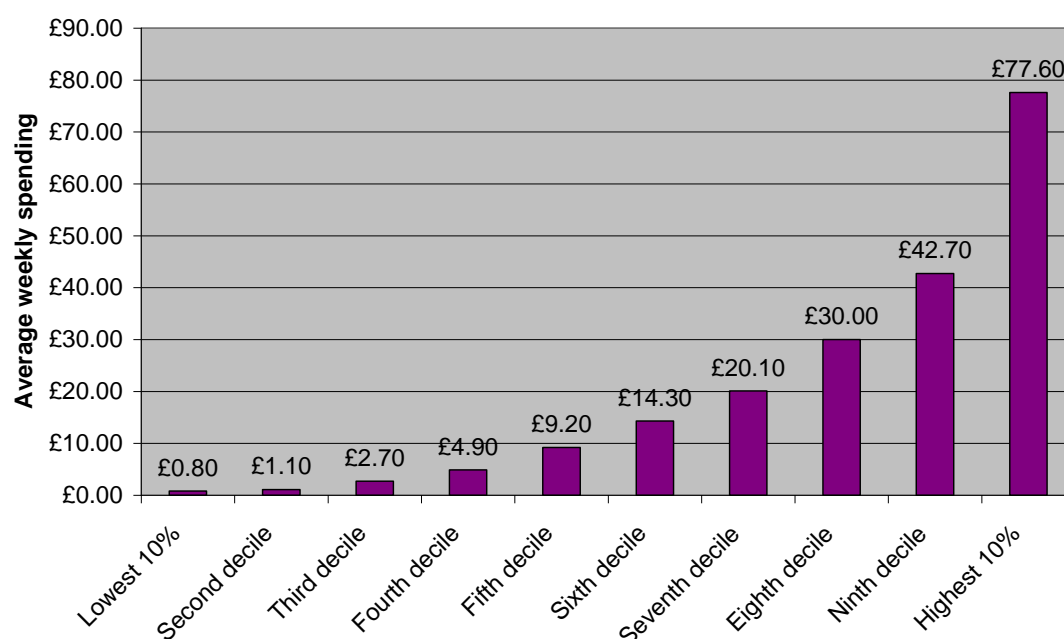
Source: Office for National Statistics, 2009a, Table A8

Employer Contributions

In the UK, all but the smallest employers are required to provide a work-based pension scheme. However, in many cases, there is no requirement for, the employer to make contributions on the behalf of the employee. By 2016, all UK employers will have to offer some type of pension scheme through the workplace. This can be an occupational scheme, work-based personal pension scheme or membership of a new national scheme called the National Employment Savings Trust (NEST). Employers will have to auto-enrol eligible employees and make mandatory employer contributions unless the employee opts out.

The UK is experiencing a marked shift from defined-benefit pension provision (where pension payouts are calculated according to a pre-set formula) to defined-contribution provision (where returns are determined by a private fund's investment return and other factors). It is salient that, whereas employers contribute on average around 16 per cent of an employee's pay to defined-benefit occupational schemes, they contribute only an average 6 per cent to defined-contribution schemes (Office of National Statistics 2010a). Moreover, the recommended employer contribution to the proposed new UK national scheme is just 3 per cent (National Employment Trust 2010). It should also be borne in mind that a significant proportion of the working population is self-employed (around one in eight workers in the UK) and so cannot benefit from any employer contributions (Office for National Statistics 2010b). There will, therefore, be widely divergent pension outcomes for individuals, depending on their employment status and the generosity of any work-based pension arrangement to which they have access.

Investment Growth during the Accumulation Phase

While investment growth will normally have the greatest impact of all the factors on an individual's pension outcome, it is also (along with annuity rates - see below) the most unpredictable part of the process. In a defined-benefit scheme, the employer shoulders these risks; in a defined-contribution scheme, they are borne by each individual member. In the UK pension fund projections are typically based on a 7 per cent a year average growth, which is the UK regulator's central recommended rate for tax-free projections as at 2011, and 2.5 per cent inflation (a real return of 4.39 per cent a year). However, the actual experience of individual defined-contribution pension scheme members will be very different depending in part on the types of assets and investments they choose, but moreover on the external factors that shape stock-market performance over the period of their own particular investment.

An often recommended approach to pension accumulation is to invest largely in equities for the earlier years with a gradual shift to bonds in the last ten years or so before the chosen vesting date (a process called lifestyling). Table 1 below shows how, following this strategy, the size of pension fund would have varied for five hypothetical individuals retiring in 2001, 2003, 2005, 2007 and 2009, respectively, given actual stock-market performance in real terms. In other respects, the scenarios are the same, with individuals having identical contribution patterns, charges experience and investment strategy. The difference is pronounced, with the 2005 retiree securing the largest pension fund. The 2007 retiree accumulates nearly one-fifth less and the 2009 retiree over a quarter less.

Table 1 Variation in pension fund by year of investing

The table shows resulting pension fund for individuals saving £100 a month, increasing once a year in line with earnings to which is added tax relief at the basic rate[1]. Individuals save for 40 years, retiring in different years between 2001 and 2009 inclusive. The fund shown is based on actual stock-market performance in real terms [2]. It is assumed that individuals invested 100% in equities for 30 years, then shifted 10% of their fund each year to bonds during the final 10 years. Charges are assumed to be as for stakeholder schemes [3] (even though these would not have been available for the whole term).

Retiring in:	Real value of fund	as % of highest valued fund
2001	£112,846	98.58%
2003	£112,384	98.17%
2005	£114,476	100.00%
2007	£94,958	82.95%
2009	£82,752	72.29%

[1] Earnings are assumed to grow by 4% a year. Basic rate tax is assumed to be 20%. Net contribution is assumed to have reached a real value of £100 by the year in which the pension is to vest.

 [2] Based on data from Barclays 2010: 71-72.

[3] No initial charge; AMC 1.5% for 10 years, 1% thereafter.

Source: Authors' calculations.

Asset Prices at Point of Decumulation

In the scenario above, the individual pension savers are assumed to have adopted a lifestyling strategy in order to protect themselves from any fall in equity prices close to retirement. If the intention is to secure a pension by purchasing a lifetime annuity (see below), since annuity rates are closely linked to the return on bonds, a lifestyling strategy of shifting to bonds will largely remove this risk. However, there still remains the possibility of an adverse affect from asset price changes at the point at which the fund is being shifted from equities into bonds. This is mitigated to some extent by spreading the shift over a period of several years (ten years in the examples above).

Without lifestyling or a similar strategy, individuals would be fully exposed to the movements in the stock market. As Toporowski (2000) points out, asset prices do not necessarily reflect the intrinsic value of underlying assets but are influenced by asset inflation and deflation. This can make asset prices extremely volatile in the short run. For example, between December 2007 and 2008, the real return on equities in the UK was -30.4 per cent (Barclays, 2010). Such a large fall in an accumulated pension fund could have a devastating effect on an individual's retirement planning.

Charges to Financial Intermediaries

Prior to the introduction of stakeholder pension schemes in 2001, personal pension schemes in the UK were typically characterised by complex charging structures, making it difficult for individuals to assess the overall level of charges for any scheme they took out. Stakeholder pensions were a UK government initiative to ensure the availability of straightforward, good-value schemes that have to conform to a set of minimum terms and conditions. These include that the only form of direct charges is an annual management charge (AMC) set as a percentage of the fund and that this

AMC will be no more than 1.5 per cent a year in the first ten years and 1 per cent a year thereafter (originally, the maximum AMC was set at 1 per cent a year throughout even including the early years, but was increased due to industry resistance to marketing stakeholder schemes with such low revenues). Stakeholder pension schemes have had some effect on the rest of the UK personal pension scheme market because their introduction was accompanied by a rule (RU64) imposed by the then financial regulator, the Personal Investment Authority (PIA), that required advisers to justify putting customers into personal pensions that were less attractive than stakeholder schemes if a stakeholder scheme would be suitable (PIA 1999). As a result, the charging structure for personal pensions has tended to become simpler and more transparent. The impact of stakeholder charging for an example individual earning £30,000 (roughly UK average earnings in 2011) is shown in Table 2.

Occupational schemes typically have lower charges (and these are sometimes borne by the employer rather than directly reducing the funds available to provide pensions). The proposed charging level for the UK's new national scheme, NEST, is considered to be close to the minimum possible and will comprise mainly an AMC of 0.3 per cent. However, there will also be a 1.8 per cent contribution charge (deduction from each contribution paid) in order to recoup the start-up costs of the scheme and it is anticipated that this charge will continue for the first 20 years of the scheme. The impact of this level of charging is also illustrated in Table 2.

An AMC is an annual charge on the total value of the fund (not just on any growth in the fund). Therefore, the total impact of the charge increases the longer the term of the investment. Table 2 shows that, after 40 years, NEST charges have absorbed just under 9 per cent of the final value of the fund. The stakeholder charges have a much greater impact and, even though these schemes are supposed to represent good value, over one-fifth of the final fund has been taken in charges by the end of 40 years. While this may represent a fair costing of the administration involved plus a reasonable profit margin, the individual pension saver would not necessarily agree that this is good value. For the impact of other levels of charging, see Table 4 below.

Table 2 Impact of charges in government-initiated schemes

The table shows the value of pension fund after charges for an individual contributing £100 a month, increasing once a year in line with earnings to which is added tax relief at the basic rate[1]. The pension fund is assumed to grow at an average rate of 7 per cent a year. No employer contributions have been included (even though these would apply in the case of NEST and could apply to the stakeholder scheme).

	10 years		20 years		30 years		40 ye
	Value of fund [2]	% lost in charges	Value of fund [2]	% lost in charges	Value of fund [2]	% lost in charges	Value of fund [2]
No charges	£19,732		£53,141		£108,049		£196,554
NEST charges [3]	£19,075	-3.33%	£50,511	-4.95%	£100,850	-6.66%	£179,926
Stakeholder charges [4]	£18,349	-7.01%	£47,203	-11.17%	£90,751	-16.01%	£155,280

[1] Earnings are assumed to grow by 4% a year. Basic rate tax is assumed to be 20%.

[2] Real value, assuming price inflation averages 2.5 per cent a year.

[3] Initial contribution charge 1.8%; AMC 0.3%.

[4] No initial charge; AMC 1.5% for 10 years, 1% thereafter.

Source: Authors' calculations.

Rate of Conversion of Saving into Pension Payments

For many individuals, the conversion of saving into pension payments will depend on annuity rates, which are driven in particular by average longevity and the yield on long-term bonds. Figure 6 charts the path of annuity rates in the UK over the last 20 years, during which time the amount of income that can be purchased has halved. This does not, of course, imply an equivalent halving of pension income, since a fall in bond rates that cuts the annuity rate may coincide with a rise in equity returns that boosts the final value of the pension fund. However, the correlation between bond and equity returns is not always negative and the effect is not usually a 100 per cent offset. Applying the annuity rates from the chart below to the lifestyled scenarios in Table 2 above, the 2001 retiree would have achieved the highest pension income (a level income of around £10,100). Retirees in the later years would have received progressively less: 85 per cent of the 2001 amount for the 2003 retiree; 79 per cent for 2005; 68 per cent for 2007; and 52 per cent for 2009.

The alternative to annuity purchase is to draw retirement income directly from the pension fund, in which case the individual continues to be exposed to variable investment returns, including asset price risk.

Figure 6 Annuity rates in the UK [1]
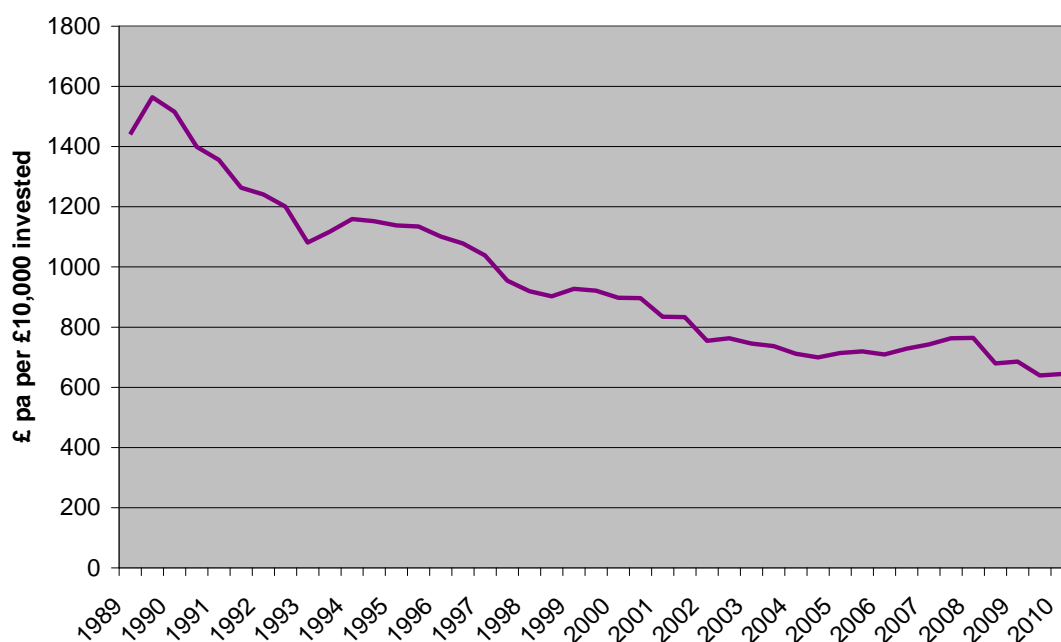
[1] Single-life compulsory purchase annuity rate for a man aged 65, non-smoker. Level annuity without guarantee.

Source: based on data from FTBI (1990-2011).

Security of Savings Institutions

An additional factor that needs to be mentioned is the possibility of default on the part of the pension provider. In the case of occupational schemes, in the extreme the employer may become insolvent leaving a defined benefit pension scheme underfunded and unable to meet the promised pension payments. In the UK, some protection is provided by the Pension Protection Fund and, where theft is involved, the Fraud Compensation Scheme. A lesser type of 'default' is where a solvent employer with an ongoing business renegotiates the terms of the pension arrangements so that, without reneging on pensions already accumulated, promises of future benefits are less generous than scheme members had anticipated and perhaps planned for. This is evident in the UK with the shift of private sector schemes from defined-benefit to deined-contribution schemes and, increasingly in the public sector, with a shift from defined-benefit final salary to defined-benefit career average salary arrangements accompanied by increased employee contribution rates.

In personal pensions, the main risk of this type is that the financial institution with responsibility for the pension fund or pensions in payment is unable to meet its obligations. In the UK, Equitable Life, the oldest mutual life assurer in the world, failed to fund adequately for annuity guarantees attached to its pension schemes creating losses for its customers. To address this type of scenario, the UK's Financial Services Compensation Scheme provides some protection where customers have a claim against a provider that has become insolvent.

Applying a Circular Flow Approach

Given the number and diversity of the risk factors embedded in the conversion of savings into pension, it is no surprise that defined-contribution funded systems deliver uncertain and highly unequal outcomes both within any cohort of pensioners and across different cohorts. Defined-benefit funding can address some of these inequalities, but are being affected by many of the same factors that are making governments shy away from defined-benefit PAYG schemes. Increasingly, funded systems are adopting the defined-contribution model. This is the context within which we must apply our circular flow approach.

The discussion that now follows will examine key parts of the circular flow diagram (Figure 3). Using the circular flow as an organising framework will also highlight some questions for future empirical exploration.

The Flow of Savings: Employees

The main thrust of recent economic analysis of pensions has been on developing policies to encourage people to save. In a survey, 42 per cent said that they agreed with the statement: 'I would rather have a good standard of living today than plan for retirement' (Atkinson et al 2006: 70). Behavioural economists attribute this attitude to myopia and excessive (hyperbolic) discounting, where little weight is attached to events in the future. And in this spirit, a financial education industry has developed in which web sites, financial literacy materials and workplace seminars are made available to try to educate and change the public view. Consistent with a social provisioning approach, this can be viewed as an attempt to influence individual agency in order to reshape the culture of saving so that it conforms with the pension philosophy of the neoliberal state.

The circular flow of income can provide a context for assessing policy initiatives that promote saving. Figure 3 shows that decisions by working households are indeed critical to the flow of savings. But, quite apart from doubts about whether financial education can alter behavioural traits (see, for example, Willis 2008) and so influence *willingness* to save, there remains the question of *ability* to save. As noted above in Figure 5, the level of pension contributions by individuals correlates strongly to household income. This is borne out by other data too. For example, a survey found that directors of the UK's top 103 companies had pensions 30 times larger than the average workplace pension (TUC 2009). The problem is critical for women, tending to have lower wages and interrupted pension contributions due to child-rearing responsibilities. Ginn and Arber (1999) found that women make up two thirds of pensioners living in poverty.

The recently established British Wealth and Asset Survey (ONS 2010c) underlines the extent of inequality in pensions wealth between men and women and different socio-economic groups (see Table 3). For example, while over the survey period 2006-8, 13 per cent of individuals working for large employers have no private pension wealth, the proportion rises to 62 per cent for workers in routine occupations. The median pension wealth for women is just £800 compared with £15,000 for men. The same survey shows that median pension wealth for men compares with a mean of nearly £115,000, demonstrating the marked skew in the wealth distribution.

Table 3 Wealth held by individuals in private pensions 2006-8

Socio-economic classification	*Men*		*Women*		*All*	
	Median pension wealth £	**% with any pension wealth**	**Median pension wealth £**	**% with any pension wealth**	**Median pension wealth £**	**% with any pension wealth**
Large employers and higher managerial	132,200	90	48,500	83	97,800	87
Higher professional	69,300	83	36,700	79	57,900	82
Lower managerial and professional	50,100	79	30,000	73	38,300	76
Intermediate occupations	23,300	68	6,000	61	8,500	63
Small employers and own account workers	5,000	60	0	42	2,200	54
Lower supervisory and technical	12,100	66	0	46	6,000	60
Semi-routine occupations	500	51	0	39	0	43
Routine occupations	0	47	0	27	0	38
Never worked/ long-term unemployed	0	11	0	8	0	9
All	15,000	65	800	52	6,000	58

Source: Office for National Statistics (2010c), Table 6.14.

The circular flow of income can also be used to monitor imperfections in funded pension provision. First, pension products are mis-sold on a regular basis. Concerted sales drives on the part of the financial services industry have in recent years not been confined to sub-prime mortgage products. In the 1980s, UK neoliberal policies encouraged the opting out from work-based into personal pensions; Sullivan (2004: 93) estimates that around a million pension products were mis-sold as a result. Cases also abound, such as Enron in the US, where fraudulent behaviour has led to a collapse in pension provision. Second, in order to market pension products, the financial services industry has to make a profit, by making charges. As highlighted by

a headline in the *Sunday Times* newspaper, 'Hidden fees may halve pensions' (Montagu-Smith 2010). Theoretical calculations show that even relatively modest levels of charges result in a large loss of final pension fund - see Table 4. Moreover, experiments such as the introduction of stakeholder pensions in the UK show how the financial industry can resist policy moves to reduce charges.

Key questions for future analysis using the circular flow of income approach include, not just how large is the impact of charges in total, but also their impact across different types of pension scheme and different levels of contribution.

Table 4 Theoretical impact of charges on pension fund outcomes

The table shows the percentage of the final pension fund lost in charges where they are levied in the form of a fixed percentage annual management charge [1].

Charges % pa	Investment term (years)				
	10	20	30	40	50
0	0.0%	0.0%	0.0%	0.0%	0.0%
0.3	-1.6%	-3.2%	-5.0%	-6.8%	-8.7%
0.5	-2.6%	-5.3%	-8.1%	-11.0%	-14.0%
1	-5.1%	-10.2%	-15.3%	-20.5%	-25.6%
1.5	-7.4%	-14.7%	-21.8%	-28.7%	-35.3%
2	-9.7%	-19.0%	-27.7%	-35.8%	-43.4%
2.5	-12.0%	-22.9%	-33.0%	-42.0%	-50.2%

[1] Assumes gross investment growth of 7% pa, charges are deducted monthly, net contribution of £100 per month increasing once a year in line with earnings inflation of 4% pa.

Source: Authors' calculations.

The Flow of Savings: Employers

The UK is unusual in having a public-private partnership in pension provision through a system known as 'contracting out'. This stems back to the introduction of the state additional pension in 1978, then in the form of the state earnings related pension (SERPS). The Labour government of the day had noted that a key component in the inequality in the income of pensions was a lack of good occupational pensions. Pensioners without access to this source of income tended to have much lower incomes. The solution was seen to be some kind of state earnings-related pension that mimicked the best occupational schemes, but the cost could be prohibitive, depending on factors such as future wage inflation. The solution was to share the risks of the scheme between the state and employers through the system of contracting out. In return for a known cost to the state in terms of a reduction in national insurance contributions, employers could take on the responsibility of providing a defined-benefit substitute for the SERPS pension that would otherwise have built up. In this form, contracting out shared costs and risks between state and employer, but individuals bore no risk of lower pensions.

The Thatcher administration in 1988 substantially reformed contracting-out and, for the first time, enabled individuals (rather than employers) to make the contracting out decision but, most significantly, enabled contracting out on a defined-contribution basis. Contracting out could now be a route to transferring substantial risks from the state direct to the individual.

In the buoyant climate of the 1970s and most of the 1980s, large employers signed up to contracting out and pension provision generally, confident they could deliver on their pension promises. As the 1990s progressed, with increasing legislation to secure employees' pension rights, changing accounting rules that matched the measurement of pension scheme assets to volatile stock markets, and mounting evidence of increasing longevity, it was no longer just the state that was concerned about the costs and risks of pension provision. Employers began to take flight as well, choosing to set up less generous types of pension arrangement and closing their earlier defined-benefit schemes. By 2007, nearly three-fifths of defined-benefit schemes dated from before 1980 and, of these, 56 per cent had closed. Nearly all occupational defined-contribution schemes have been founded since 1984, with nearly half (48 per cent) started since 2000. In 1997, 46 per cent of employees belonged to an occupational defined-benefit scheme; by 2008, the proportion had fallen to 33 per cent (Office for National Statistics 2009b).

These shifts in the costs and/or risks of pension provision from the state to employers and individuals, and from employers to individuals, are often presented as necessary to ensure the sustainability of the remaining state and employer-sponsored schemes. What is lost in the rhetoric is that the individual is the least able to bear these costs and risks. Aside from the problem of income inequality there is also a problem of inequality of power. The TUC (2009) survey found that 61 per cent of top directors continued to enjoy defined benefit pensions in 2009, compared to only 13.5 per cent of employees. As discussed above, the pension payments earned by those demoted to defined contribution pensions are dependent on a range of highly uncertain factors, including investment returns and annuity rates. Employees are vulnerable to macroeconomic trends, such as low interest rates (for annuities) and stagnant stock markets (for investment returns). Moreover, there is a variance in the performance of investment funds, with only some providing alpha returns, and many underperforming the market benchmarks.

What is significant here is not whether pensions are financed on a PAYG or funded basis, but whether they are provided on a defined-benefit or defined-contribution basis. Defined-benefit schemes, whether state PAYG or occupational schemes, allow for cross subsidies so that the better-off, better-able to pay contributors help to provide pensions of at least enough to take pensioners out of poverty. In other words, defined-benefit schemes enable a progressive pension system, while defined-contribution schemes perpetuate inequalities. Therefore an analysis based around the circular flow of income should distinguish at the aggregate level between defined-benefit and defined-contribution provision.

The Flow of Tax Relief

Moving to the middle of Figure 3, the next flow to question is that of tax relief from Government to pension funds. Tax relief on private pensions is skewed towards higher income groups: in the UK, up to 2010-11, as much as £255,000 in contributions (and other annual increases in pension rights) each year could be eligible for tax relief (HM Treasury 2010a). As shown in Table 5, the net cost of pension tax reliefs in the UK was around £19 billion a year in 2008-9 or £27.1 billion including relief from national insurance on employers' contributions (HM Revenue & Customs 2010).

A report by the Pensions Policy Institute (2004) estimating the net cost of pensions tax reliefs in 2004 at around £19 billion (1.8 per cent of GDP and equivalent to about a quarter of the cost of state PAYG pensions), provides insights into the distribution of these reliefs. Around 55 per cent of the tax relief benefited some 2.5 million higher-rate taxpayers, with 13 million basic-rate and non-taxpayers sharing the remainder. Around 9 million taxpayers were making no pension savings and so did not share in the tax relief at all - many of these will be the low income households who cannot afford retirement savings. Since only 20 per cent of higher-rate taxpayers were women, the tax reliefs are not only biased towards higher earners but also towards men.

The UK limit on contributions (and other increases in pension rights) that can be eligible for tax relief is being reduced to £50,000 a year from 2011-12, which together with other changes affecting larger pension savings, is expected to reduce the net cost of pension reliefs by £4 billion a year (HM Treasury 2010b). This limit still marks a significant additional advantage for those households able to make larger contributions. In fact, it has been estimated that the reduction to £50,000 a year affects only some 100,000 individuals, four-fifths of whom have incomes over £100,000 and so are comfortably within the highest decile of gross income (HM Treasury 2010b).

Table 5   Pension tax reliefs in the UK, 2008-9

Tax relief for/ tax on:	2008 £ million	% GDP
Tax reliefs		
Occupational scheme contributions		
by employers	11600	0.90%
by employees	4200	0.32%
Personal pension scheme contributions		
by employers	2529	0.20%
by employees	1650	0.13%
Personal scheme contributions by the self-employed	1250	0.10%
National insurance rebates to contracted-out personal schemes	120	0.01%
Investment income of funds	6700	0.52%
Lump sum payments from unfunded schemes	450	0.03%
Total		2.20%
less Tax paid on		
Pensions in payment	9500	0.73%
Refunds by funds to employers related to pension fund surpluses	1	0.00%
Total		0.73%
Net reliefs	**18900**	**1.46%**
National insurance relief on employer contributions	8200	0.63%

Source: HM Revenue & Customs, 2010.

The Balance Between Contributions and Payments

Once tax relief is taken into account, the health and sustainability of pension funds, in particular work-based schemes, depends on the balance between flows of savings and pension payments, as displayed in Figure 3. The problem, as raised by Toporowski (2000), is that each pension fund goes through an immature accumulation phase, when there are more contributing employees than retirees, and a mature phase when retirees draw more than contributing employees. With pension funds first set up in the period following the Second World War, in an initial accumulation phase of high employee contributions, the argument is that eventually pension funds must start to be run down.

In the neoliberal world of the Washington consensus, this net dis-saving would depress investment and thus economic growth. From a demand-side perspective the outcomes are less certain. Investment - being exogenous - might be buoyant and funded from other sources (such as bank finance). Indeed, Toporowski (2000) argues that the abundance of pension fund savings does not necessarily create investment funding but may just produce asset price inflation. Therefore a reversal of this abundance may manifest as asset price deflation rather than any reduction on capital investment. The outcome at the aggregate level, therefore, might not be a reduction in

economic growth. However, it should be borne in mind that asset price inflation and deflation would drive unequal outcomes at the individual level for those approaching retirement with defined-contribution pension pots. In other words, the viability of funded schemes in terms of meeting pension expectations relies on the willingness and ability of working households to take up the assets that retired households no longer wish to hold. The ability of working households as a group to absorb this dis-saving depends not just on the demographics that determine the size of this sector of the economy but also incomes that determine the ability to save. Incomes in turn will be influenced by factors, such as the capital-to-labour ratio, including investment in human capital.

The running down of pension funds also implies an increased boost to consumption as pensioners spend their previous savings. As MacKellar (2000) has suggested, the composition of investment rather than the level may be affected as production shifts to the goods and services preferred by older households.

If we accept the neoclassical view that declining pension funds will depress economic growth, the main way in which the run down in pension funds can be avoided is if there is sufficient growth in wages (which means that working households would then have the means to purchase the assets being sold by pensioner households). Even though demographic support ratios are falling, with less paying in than drawing out of pension funds, higher wages can keep funds buoyant. If only capitalism could deliver higher wages. Unfortunately, in recent years, despite a pronounced period of economic growth, wage growth has been stagnant. The problem is most stark in the US, as lucidly put by David Harvey:

> For the first time in US history, working people have failed to share in any of the gains from rising productivity. We have experienced thirty years of wage repression. (Harvey 2010: 12).

The counterpart to wage repression has been an increase in profits. Moreover, financial profits as a percentage of total profits have increased from just over 15 per cent in 1965 to 40 per cent in 2005 (Foster 2008). A question which could be posed in the circular flow of income is how much of these financial profits are attributed to funded pensions. As we have seen above, financial service providers set charges on sales of pension products that are met by individual savers; indeed the selling of financial products is one of the main business activities of the sector. And although there is a literature on what type of pension product to choose – the choice between passive and active investing can result in charges varying from 0.5 to 2 per cent a year or more, depending on the pension product – there has not been much attention paid to the aggregate size of charges and their contribution to financial profits.

Not much attention has been paid either to the arguments introduced above, and developed by Toporowski (2000), that pension funds lead to inflation in asset prices. He argues that pension funds have generated an inflow of money into stock markets. The consequent increase in asset prices has all the makings of an unsustainable bubble, and the threat of financial instability. Furthermore, it can be argued that the inflation in asset prices helps to further drive the increase in financial profits; and these profits are paid out in huge bonuses to the new financial class of super rich. And

where do they tend to invest these bonuses? – in more financial assets, leading to even higher values.

The Flow of Finance to Firms

A fundamental issue is whether inflating asset prices lead to an increase in real investment. It would be hoped that firms are more able to have new share issues or to borrow from banks on the basis of these inflating assets. But one possible vehicle, as identified by Steindl (1952), is the use of inflated share prices for particular firms as a basis for mergers and takeover of other firms (Toporowski, 2005). An additional question posed for the circular flow is to measure what proportion of financial surpluses is translated into real investment.

These questions about the neoliberal promotion of funded pensions point to a critique of Say's Law: the pre-Keynesian tenet of classical economics. According to Say's Law, at least as it was defined by the classical economist Ricardo, supply creates its own demand. So if an increased supply of private savings into funded pensions is encouraged, this should result in an increase in real investment. By suggesting, as an alternative, that finance has an autonomous role, in which inflows lead to the inflation of asset prices that do not automatically translate into the real economy, a critique of Say's Law is put forward. Related to this perspective, Cesaratto (2006) provides a detailed critique of funded pensions by invoking Keynes's paradox of savings, in which individual savings leads to lower aggregate demand and lower investment in capital stock.

This critique is further developed by looking at the implications of financialization on aggregate demand as a whole. As we have seen, the super rich in the financial sector have in large part invested their bonuses in financial assets, but this means that they are not contributing to aggregate demand. Although they may engage in conspicuous consumption (as argued by Thorstein Velben), the question has to be posed whether they can generate sufficient consumer expenditure in order to complete the circular flow of income? From a demand-side perspective, the combination of wage repression and huge financial profits generates a shortfall in aggregate demand for the circular flow of income. A key question is the extent to which pension funds, which we have seen can generate inequality in pension income, can contribute to this effective demand problem.

State Pensions as an Alternative

This set of issues with private pension systems raises a set of questions about the state PAYG system. Firstly, is the rhetoric of unsustainable state pensions that has been promulgated since the 1980s, and more recently the issues over sustainability of occupational defined-benefit schemes, focusing on the key question? Or is it side-stepping the more awkward question of whether the level of pensions expectations can be met at all whether through state PAYG schemes or funded alternatives? If the more valid question is the general level of affordability, this opens the debate to consideration of a more complete range of social provisioning questions, such as: which types of pension system can best meet at least a minimum level of provision;

which can provide greater equality of outcome between individuals within a cohort and across different cohorts; which types of system can be delivered with the lowest administrative costs; which systems can channel resources into real investment?   As argued above, at the level of the circular flow of income, there is less distinction between PAYG and funding than appears at first sight. As a result, the answers to the questions posed are more likely to lie in the distinction between defined-benefit (which can be provided on a PAYG or funded basis) and defined-contribution (which can only be funded) - although there are some possibilities of risk-sharing within defined-contribution schemes through, for example, collective defined contribution schemes (see, for example, Hewitt Associates 2009).

If the circular flow approach suggests that a PAYG defined-benefit approach can achieve the same aggregate economic outcomes as a funded defined-benefit approach, the rationale for cutting back on PAYG pension systems is reduced to an ideological rather than economic position. It is salient to compare the distribution of public spending on pensions in different countries. Whereas the US spends only 6 per cent of its GDP on pubic pensions, and the United Kingdom only 5.7 per cent, other countries such as France and Germany allocate over 10 per cent to state pension systems (see Figure 7). Furthermore, to illustrate the importance of this allocation of resources, the European Commission reports for the UK that 30 per cent of its pensioner age population lives in relative poverty (income less than 60 per cent of median income); whereas in France pensioner poverty is only 13 per cent and Germany only 17 per cent (Eurostat 2009). The key question is how such countries feel able to afford to allocate more pubic resources to pensions. Is this at the expense of profits, or real investment, due to lower public expenditure on say military expenditure, or because of a willingness to tolerate higher taxes as the price of social benefits? A comparison of pension systems between countries suggests an investigation into the wider circular flow of income. The overall operation of Say's Law, under which savings automatically lead to investment, is brought into question by this circular flow perspective.

Figure 7 Public Pension Spending in OECD Countries
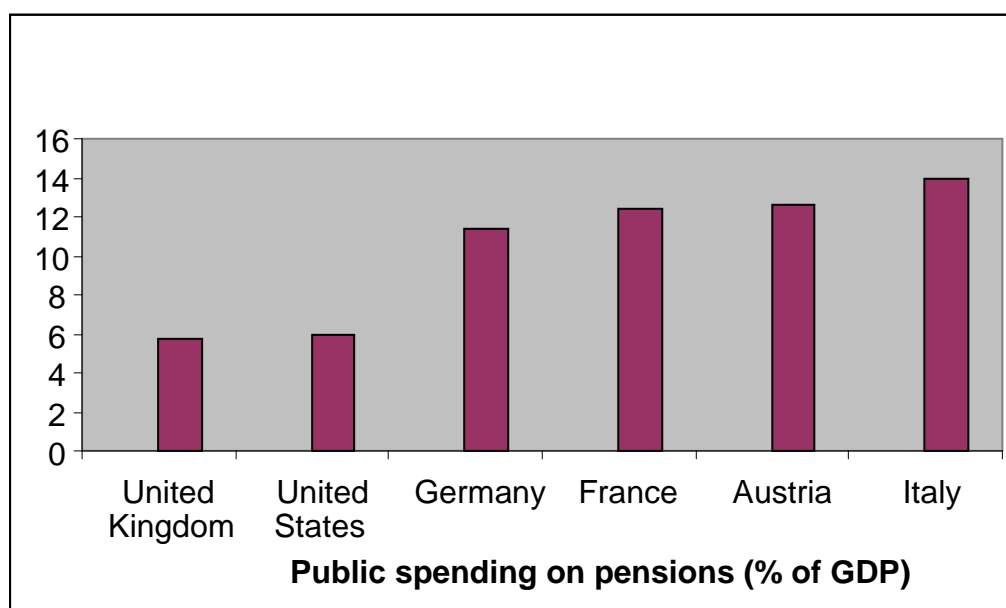
Source: OECD (2005)

Conclusions

By using the circular flow of income as an organising framework, an overview is provided of some key issues in retirement planning. Private and public pension systems are shown to have a comparable structure, each dependent on income from employment. This comparison provides the basis for a critique of private pension systems, as promoted in the neoliberal/Washington consensus, from a social provisioning perspective. Whereas in a state system taxation out of wages is for the most part mandatory, the flow of private savings in the circular flow can succumb to a number of pitfalls. Not only do private individuals tend to lack the willingness and ability to save; they are also exposed to the prevalence of mis-sold investment products, with varying performance and punitive charges and fees. Examination of the flow of pension payments in the circular flow reveals pronounced inequalities between income groups and between men and women. Low wages for women provide a key driver for this inequality, and such imbalances are further driven by inequalities of power, in which predominantly male senior executives are able to avoid the diminution of defined benefit pension rights suffered by most employees. Inequality is then further compounded by the flow of tax relief for private pensions, which is heavily skewed towards high income earners. Far from being a neutral administrator, the state has a clear role to play in the social provisioning of pension resources.

The circular flow approach can also be used to examine the neoliberal argument that private pension systems promote economic growth. Issues are raised about whether increased pension savings lead to asset price inflation that, via charges and bonuses, further compounds income inequalities. Instead of a focus purely on demographics (declining support ratios) which are shown to affect funded as well as PAYG systems, the circular flow approach highlights the dangers for private pension systems of wage

stagnation, that restricts savings, alongside higher profits, speculation and financial activities such as merger acquisition on the part of firms.

This article provides some empirical evidence about the issues involved in designing pension systems, gathered together from disparate sources. What we are not able to offer as yet is a systematic analysis of how money flows in and out of the pension system as a whole – for either private or public systems. There is insufficient information to make any judgement as to where private pension systems are at their most disadvantageous. Is it, for example, the distribution of tax relief or problems of investment performance or charges that is the most important issue for private pension systems? And in which part of the circular flow of income might a comparable state pension system be more equitable. Why specifically might German and French state pension systems be preferable to a private pension system approach?

In future work a social accounts approach, following the principles developed by Stone (1986), will be considered as a possible vehicle for modelling pensions in the circular flow of income. In this approach, instead of focusing on Leontief input-output linkages between industries, of key interest will be the household and accumulation accounts. These would have to be disaggregated to take into account the employed and the retired, and the financial and real sectors of the economy. But this is the great advantage of a social accounts matrix: that the distribution of income between different groups and parts of the economy can be potentially examined in a disaggregated but consistent framework for society as a whole. The social accounts approach can potentially model the social provisioning of pensions, as a possible alternative to the emphasis on the private accounting of individuals and pension funds associated with pension economics.

References

Atkinson, A., MacKay S., Kempson, E. and Collard, S. (2006). Levels of *Financial Capability in the UK: Results of a Baseline Survey* London: Financial services Authority.

Barclays (2010). *Equity Gilt Study*. London: Barclays.

Barr, N. and Diamond, P. (2008). *Reforming Pensions*. Oxford: Oxford University Press.

Cesaratto, S. (2006). "Transition to fully funded pension schemes: a non-orthodox criticism." *Cambridge Journal of Economics* 30: 33-48

Department of Social Security (1998). *A New Contract for Welfare: Partnership in Pensions*, Cmnd 4179. London: The Stationary Office.

Department for Work and Pensions (DWP) (2009). *Saving for retirement: implications of pension reforms on financial incentives to save for retirement*. London: DWP.

Department for Work and Pensions (2011). *Pensions Bill 2011. Summary of impacts*. London: DWP.

Eurostat (2009). *Community Statistics on Income and Living Conditions*. Online. www.epp.eurostat.eu (Accessed 6 November 2009).

Financial Times Business Information (1990 to 2011). *Pensions Management*. London: The Financial Times.

Foster, J.B. (2008). "The financialization of capital and the crisis." *Monthly Review* April

Ginn, J. and Arber, S. (1999). "Changing patterns in pension inequality." *Ageing and Society* 19(3): 319-42

Government Actuary's Department (2010). *Government Actuary's Quinquennial Review of the National Insurance Fund as at April 2005*. London: GAD.

Harvey, D. (2010). *The Enigma of Capital*. London: Profile Books.

Hewitt Associates Ltd (2009). "Collective DC/Target Pensions." Conference presentation at University of Exeter, Risk-sharing in Defined-Contribution Schemes, 7-8 January 2010.

HM Revenue & Customs (2010). "Table 7.9 Registered pension schemes." Online. Available. http://www.hmrc.gov.uk/stats/pensions/table7-9.pdf. (accessed 30 January 2011).

HM Treasury (2010a). "Rates and Allowances in 2010-11." Budget press notice PN02, 24 March. London: HMT.

HM Treasury (2010b). "Consultation on Finance Bill 2011: Restricting pensions tax relief" Online. Available. http://www.hm-treasury.gov.uk/finance_bill_2011.htm. (accessed 9 December 2010).

Holzmann, R and Hinz, R (2005). *Old-age income support in the 21st century. An international perspective on pension systems and reform*, Policy report. Washington: World Bank.

MacKellar, F.L. (2000). "The predicament of population ageing: a review essay." *Population and Development Review* 26(2): 365-404

Montagu-Smith, N. (2010). "Hidden fees may halve pensions" *The Sunday Times*, Money Section, p.1, 12th December.

National Employment Trust (2010). *NEST. Key facts and myths buster*. Online. Available. http://www.nestpensions.org.uk. (accessed 19 September 2010).

Office for National Statistics (2009a). *Family spending*. London: Palgrave Macmillan.

Office for National Statistics (2009b). *Pension Trends*, Chapter 6. London: ONS.

Office for National Statistics (2010a). *Pension Trends*, Chapter 8. London: ONS.

Office for National Statistics (2010b). *Labour Market Statistics*, September 2010. London: ONS.

Office for National Statistics (2010c). *Wealth in Great Britain. Main Results from the Wealth and Assets Survey 2006/08*. London: ONS.

Office for National Statistics (2010d). *United Kingdom National Accounts. The Blue Book*. Basingstoke: Palgrave Macmillan.

Office for National Statistics (2010e). *Pension Trends*, Chapter 14. London: ONS.

Pensions Policy Institute (2004). *Tax Relief and Incentives for Pension Saving*. London: PPI/Age Concern.

Personal Investment Authority (PIA) (1999). "Advice on personal pensions in advance of the introduction of stakeholders pensions." *Regulatory Update 64*. London: PIA.

Steindl, J. (1952). Maturity and Stagnation in American Capitalism. Institute of Statistics Monograph No. 4. Oxford: Basil Blackwell.

Stone, J.R.N. (1986). "Social Accounting: The State of Play." *The Scandinavian Journal of Economics* 88(3): 453-472

Sullivan, M. (2004). *Understanding Pensions*. Abingdon: Routledge.

Thaler, R. and Benartzi, S. (2001). *Save More Tomorrow: Using Behavioral Economics to Increase Employee Saving*, Los Angeles. The Andersen School at UCLA. Online. Available. http://www.anderson.ucla.edu/faculty/shlomo.benartzi/savemore.htm. (accessed 26 January 2011).

Thaler, R.and Sunstein, C. (2008). *Nudge*. London: Penguin Books.

Toporowski, J. (2000). *The End of Finance*. London: Routledge.

Toporowski, J. (2005). *Theories of Financial Disturbance*. Cheltenham: Edward Elgar.

Trades Union Congress (TUC) (2009). PensionsWatch 2009 [online], www.tuc.org.uk/extras/PensionWatch2009.pdf (Accessed 6 November 2009).

Trigg, A.B. (2010). "Conclusion: investing for the long term." In *Personal Investment: Financial Planning in an Uncertain World,* eds. M. Mazzucato, J. Lowe, A. Shipman and A. Trigg pp. 361-388. London: Palgrave.

United Nations Statistical Office (1953). A system of national accounts and supporting tables, studies in methods, series F., No. 2. New York: United Nations.

United Nations (2009), *World Population Ageing 2009* [online] http://www.un.org/esa/population/publications/WPA2009/WPA2009_WorkingPaper.pdf. Accessed 15 November 2010.

Willis, L.E. (2008). "Against financial literacy education." Public Law and Legal Theory Research Paper Series Research Paper No. #08-10: Philadelphia: University of Pennsylvania Law School.

World Bank (1994). *Averting the Old Age Crisis.*Washington: World Bank.