# Comparing Pension Systems in the Circular Flow of Income

**Andrew B. Trigg and Jonquil T. Lowe**

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**Department of Economics**
**The Open University**
**UK**

A.B.Trigg@open.ac.uk

J.T.Lowe@open.ac.uk

# 1. Introduction

Under the Washington consensus, market-based solutions have been sought in areas as diverse as education, health and business financing. Individuals are encouraged to take responsibility for their own standard of living, health and 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. As argued by the Pensions Policy Institute in the UK: ‘Millions of people will have to work until 72 to stop the cost of pensions spiralling out of control’ (Daily Express, August 21st, 2010). The argument is that more retirees will be increasingly dependent on a smaller workforce, and this workforce will not be able to afford to pay taxes for the pensions of an ageing population. It is also argued in the neoliberal approach that collecting less tax to pay for state pensions would leave room for more individual savings, giving individuals a share in the means of production and generating more private investment and growth.

In this paper we compare state and private pension systems using the circular flow of income. 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 ideal of a rational agent, smoothing consumption over their life cycle, a systemic approach can be developed that focuses on the structure and interconnections between institutions. The contribution of this paper 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 on the relationship between pension funds and finance (Toporowski, 2000), on the way in which savers are mistreated (Sullivan, 2004), on the inequalities associated with funded systems (Ginn and Arber, 1999) and the relationship between savings and demand (Cesaratto, 2006).

The first part of the paper will show how the circular flow can be used to compare state and funded pensions systems, 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 some of he key elements of a critique of funded pensions. A number of hypotheses are suggested that if tested would throw empirical light on these debates. In the final part we hope, as this paper develops, to explore how this framework can be implemented empirically. Our vision is that a social accounting approach can be developed in which the key elements of the circular flow that relate to pensions can be brought together in Social Accounts Matrix (SAM).

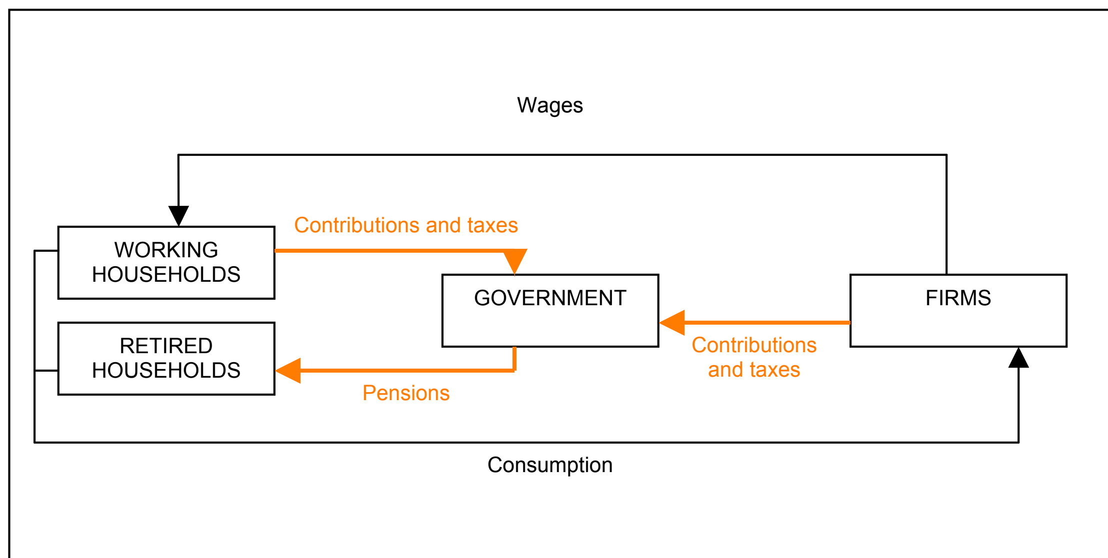
# 2. Comparing State and Private Pension Systems

Common to all pension systems is the premise that people retire after a prolonged adult working life. The circular flow of income provides as 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 in a 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, a simplifying assumption is that there are worker households and retired households. 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 (national insurance) contributions 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 proposed in the 1942 Beveridge report, and still providing the core of social policy in the UK.

**Figure 1 Pay-As-You-Go Pension System**




Source: Adapted from Trigg (2010)

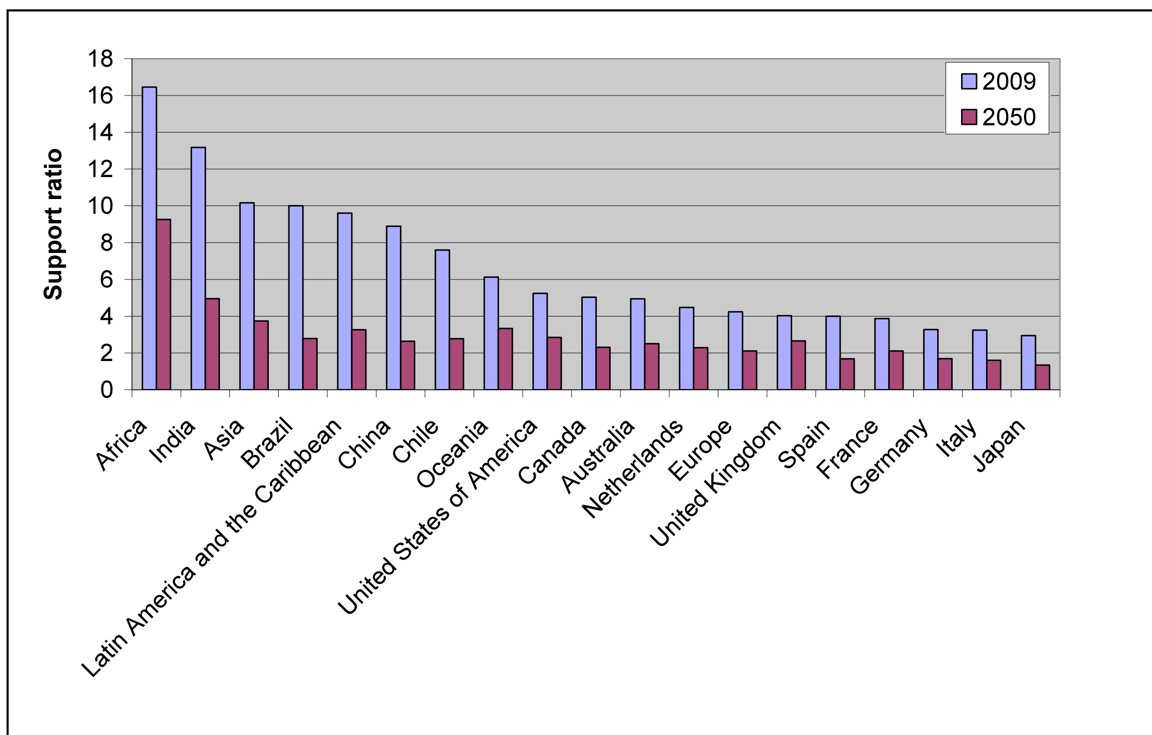
State pension systems have, however, come under increasing pressure in recent years. Most important has been the claim that there is a demographic challenge in which households have fewer children and live longer. As shown in Figure 2, across the world countries are facing declining support ratios (number 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 workers and employers, or through government borrowing. Fewer workers are available to support pensioners, and this results in less matching contributions and

taxes by employers. Unless government borrowing is increased then PAYG pensions are unsustainable.

The neoliberal response has hence 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 (to support the lifetime poor), has been a particularly strident and influential critic of PAYG schemes. In addition to being unsustainable in the face of falling support ratios, creating rising government deficits and unacceptable cost burdens for future generations, state schemes distort the labour market by creating a tax on jobs and so reduce output (Holzman and Hinz, 2005, pp24-34). 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 demand and supply for labour can be brought into balance, ensuring low unemployment. 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.

Furthermore, through the social legacy of their historical development, state schemes distort choices between work, lifelong education and retirement (Holzman and Hinz, 2005, pp24-34). The neoliberal ideal is that individuals make rational decisions about retirement, becoming responsible savers. 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, in addition, a higher rate of saving would

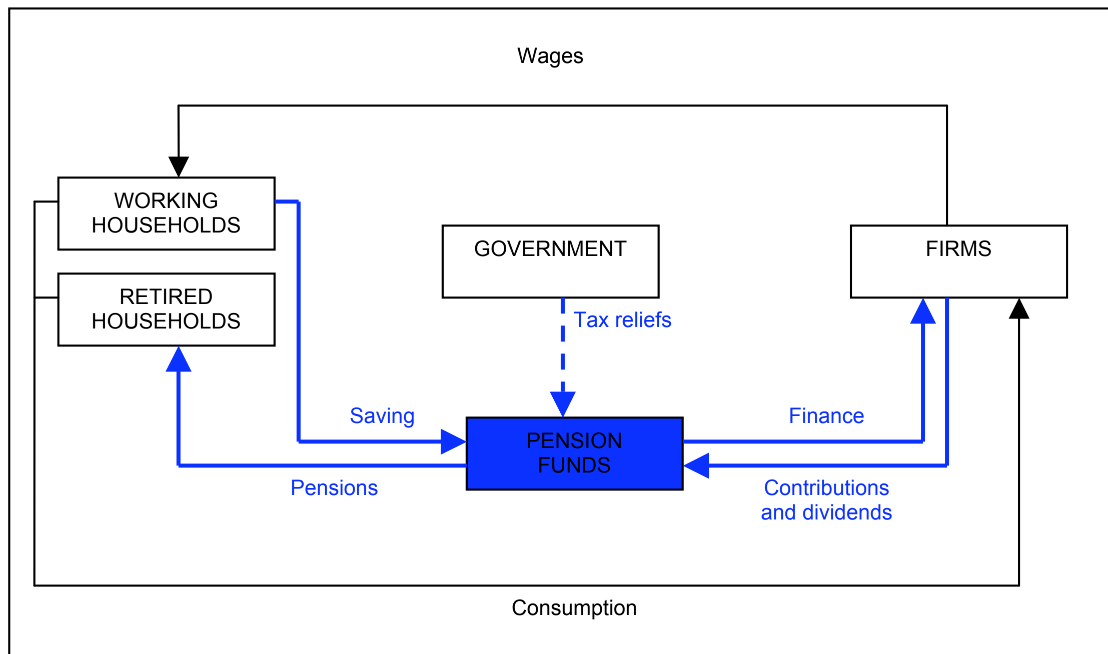
lead to more finance available for the private sector to carry out real investment. This is a supply-side approach in which investment determined by savings. A rolling back of the state frees up resources for a potentially dynamic private sector.

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, p. 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).

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

Figure 3  Privately Funded Pension System




Adapted from Trigg (2010)

As the World Bank acknowledges, 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. The advantages of the funded system are based on the more efficient functioning of a market economy. Less taxes reduce labour market distortions, more choice provides flexibility in the balance between working, lifelong education and retirement, and higher long term savings can develop securities markets that provides a boost to private sector investment. 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 fuelling economic growth.

## 3. Towards a Critique of Funded Pensions

There are a host of arguments against funded pensions: their failure to channel savings into investment; their mistreatment of consumers; 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 flow of savings*

The main thrust of recent economic analysis of pensions has been on developing policies to encourage people to save. In a survey, 55 per cent said that they agreed with the statement: 'I would rather have a good standard of living today than plan for retirement' (Atkinson, 2007). Of these, 64 per cent had no formal qualifications. Behavioural economists have attributed this to excessive 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 and financial literacy materials are made available to the public.

The circular flow of income can provide a context for policy initiatives that promote saving. Figure 3 shows that decisions by working households are indeed critical to the flow of savings, but also key are the inflows of wages to these households. A system-wide perspective provides the context for savings flows from different income groups, allowing a focus on the ability to save alongside the willingness to save. What are the constraints, it might be asked, on low income households making adequate private savings for retirement? This is the kind of hypothesis that can be posited in the circular flow of income.

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, p. 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. The question therefore arises as to how much of gross household savings is translated into pension funds, after charges, and the possibilities of fraud or mis-selling have been taken into account. What are the net flows of savings into pension funds?

### *The flow of pension payments*

Once the money is held by the pension funds, the circular flow suggests an analysis of the distribution of pension payments to retirees. There is of course a core problem of unequal incomes leading to unequal pension entitlements. 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.

But aside from the problem of income inequality there is also a problem of inequality of power. The same 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. The pension payments earned by those demoted to defined contribution pensions are dependent on 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. In the circular flow of income it might be asked, therefore, what are the flows of payments from private pension funds to retired households, and what is the distribution of these flows between income groups?

This collection of issues, on the left hand side of Figure 3, demonstrate the need for an examination of the sociology of pensions, in the tradition of Veblen and Galbraith. Far from being sovereign consumers rationally choosing the right pension product for them, individuals are dependent on the marketing strategies of financial service providers, and the sociology of power within the workplace over the quality of pension fund 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 in 2009-10 as much as £245,000 in contributions each year was eligible for tax relief (Lowe 2009, p. 23). Unequal contributions due to disparities of income and education can be compounded by an unequal flow of tax relief. To what extent, it might be asked, does tax relief for funded pensions enhance inequality in pension transfers?

***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 they must start to be run down.

The main way in which a run down in pension funds can be avoided is if there is sufficient growth in wages. 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, p. 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% 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 argument, also 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 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.

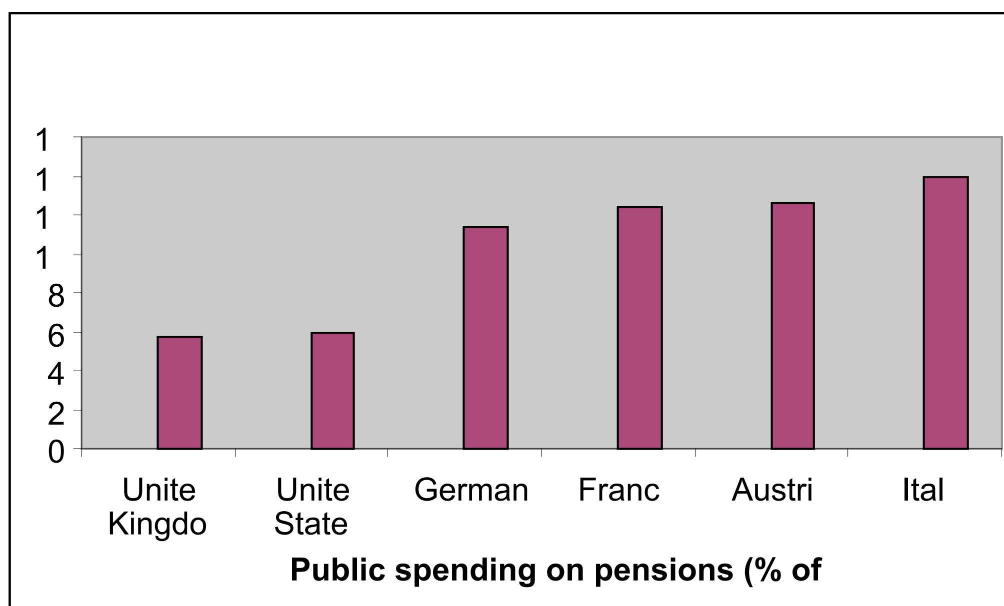
This critique is further developed by looking at the implications of financialization on aggregate demand as a whole. As we have seen, the super rich in the financial sector have in large part invested their bonuses in financial assets, but this means that they are not contributing to aggregate demand. Although they may engage in conspicuous consumption (Veblen and Galbraith again), 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 suite of questions must also be asked alongside a parallel set of questions about the state PAYG system. Do state pensions lead to less inequality? Do they suffer from administrative costs equivalent to charges on private pensions? Do they channel resources into real investment? Do state pensions require improperly high rates of taxation?

One way into answering this type of question is to compare the distribution of public spending on pensions in different countries. Whereas the US spends only 6% of its GDP on pubic pensions, and the United Kingdom only 5.7%, other countries such as France and Germany allocate over 10% to state pension systems (see Figure 5). Furthermore, to illustrate the importance of this allocation of resources, the European Commission reports for the UK that 30% 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 can afford to allocate more pubic resources to pensions. Is this at the expense of profits, or real investment, because of higher taxes, or is this due to lower military expenditure? A comparison of pension systems between countries suggests an investigation into the wider circular flow of income.

Figure 5 Public Pension Spending in OECD Countries




Source: OECD (2005)

## 4. A Social Accounts Approach

To explore how the circular flow of income can be examined empirically, in relation to pensions, we now turn to a social accounts approach. Hicks (1942) coined the phrase 'social accounting' in order to distinguish between the social accounting of the community and the private accounting of the individual. He argued that social accounting could provide the groundwork for future work in both economic theory and descriptive economics. As a starting point, economic theory was considered too abstract, whilst descriptive economics could be just a dull collection of facts. Hicks had the insight that a system of accounts offered the potential to fuse together both theory and practice in order to understand complicated relationships.

Paralleling the work of Hicks in the 1940's was the development of the first system of national accounts (SNA). The work of Richard Stone at Cambridge University prepared the ground for the United Nations SNA, which was set up in 1952 (United Nations Statistical Office (1953). This double-entry book-keeping approach formulated national accounts on the principle that for each transaction there are two transactors, one that pays and the other that receives. A credit for one transactor is a debt for another – any transaction must appear in the account of both transactors.

It was on this basis that Stone (1961) developed social accounts in which Leontief input-output flows can be co-ordinated with income and production accounts. The elegant simplicity of this model is based on the introduction of single-entry accounts

in a Social Accounts Matrix (SAM). Table 1 provides a schematic representation of a SAM for four accounts, representing production, households, government and accumulation. Instead of representing these accounts separately they are brought together into a single accounting framework.

Table 1 A Schematic Social Accounts Matrix

| | | Expenditures | | | |
|---|---|---|---|---|---|
| Receipts | | 1 | 2 | 3 | 4 |
| Production | 1 | $T_{11}$ | $T_{12}$ | | $T_{14}$ |
| Households | 2 | $T_{21}$ | | $T_{23}$ | |
| Government | 3 | | $T_{32}$ | | |
| Accumulation | 4 | | $T_{42}$ | | |

As in the circular flow of income, the flow of money moves in the opposite direction to real flows. For example, the flow of labour services from households (account 2) to production (account 1) is represented as part of the entry $T_{21}$; and this entry also in part represents the flow of money wages in the opposite direction.

To analyse the circular flow in relation to pensions, a number of channels of investigation are possible. Two of these can be highlighted. First, key to the viability of the PAYG system is the flow of contributions and taxation from the household account to the government account, $T_{32}$. This inflow to the government account has to be sufficient to balance the outflow from the government account to retired households, as part of $T_{23}$. To explore the accounts of funded pensions, the flows from households to the accumulation accounts $T_{42}$ might be examined; and to see how these funds translate into real investment one might turn to the entry $T_{14}$.

Of course in practice household and accumulation accounts, in this example, 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 is suggested here as a possible alternative to the emphasis on the private accounting of individuals and pension funds associated with pension economics

**References**

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, pp. 33-48.

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

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

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

Ginn, J. and Arber, S. (1999) 'Changing patterns in pension inequality', *Ageing and Society*, vol. 19, no. 3, pp. 319-42.

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

Hicks, J.R. (1942) *The Social Framework: an Introduction to Economics*. Oxford: Clavendon Press.

Lowe, J.T. (2009) *Finance Your Retirement*. London: Which?
Steindl, J. (1952) Maturity and Stagnation in American Capitalism. Institute of Statistics Monograph No. 4. Oxford: Basil Blackwell.

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 M. Mazzucato, J. Lowe, A. Shipman and A. Trigg (eds.), *Personal Investment: Financial Planning in an Uncertain World*, 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