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**INCOME FROM WORK –
THE FOURTH PILLAR
OF INCOME PROVISION
IN OLD AGE**

By Gabriel Heller Sahlgren
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Gabriel Heller Sahlgren is Research Fellow at the Institute of Economic Affairs, Affiliated Researcher at the Research Institute of Industrial Economics in Stockholm, Sweden, and Director of Research at the Centre for Market Reform of Education. He is the author of *Work Longer, Live Healthier: The Relationship Between Economic Activity, Health, and Government Policy*, an IEA Discussion Paper that analysed the impact of retirement on health. He also recently published the book *Incentivising Excellence: School Choice and Education Quality*, which discusses the conditions that need to prevail for school choice to produce higher achievement and analyses a vast amount of research on this topic. Gabriel appears frequently in UK and international media on issues related to applied microeconomics.

Summary

- Despite substantial improvements in life expectancy, the employment rate among men aged 55-59 decreased from over 90 per cent to less than 70 per cent between 1968 and the end of the 1990s. The figures for men aged 60-64 and men aged 65-69 slumped from around 80 per cent to 50 per cent and 30 per cent to about 15 per cent respectively.
- Recently, there has been some reversal of the trend of declining employment at older ages. For example, the employment rate for males aged 55-59 was about 80 per cent in 2008.
- Not only do recent improvements not reverse the earlier decline; employment rates among the elderly should have increased since the 1960s to reflect increasing life expectancy and improved health.
- Many other EU countries have lower labour market participation amongst older workers than the UK. In Italy, for example, only 40 per cent of 55-64 year olds are active in the labour market. In Switzerland, however, employment is around 70 per cent of the workforce in this age group and both the USA and Japan have higher employment rates than the UK.
- Well-functioning retirement-income systems are desirable to enable people to retire from work. However, it is undesirable to have state welfare systems that encourage early retirement and impose the costs on others. It is also undesirable for labour market regulation to prevent those who would like to remain in employment from doing so.

- A number of reforms are necessary to facilitate beneficial labour market participation at older ages:
 - The current government's reforms to state pension age are a move in the right direction but they should go further and faster:
 - From November 2018, the state pension age for men and women should be increased by two months every quarter, thus raising state pension age to 68 by January 2023.
 - From January 2023 state pension age should be linked directly to increases in life expectation.
 - The state pension should be replaced by compulsory, private defined-contribution pension arrangements – similar to those introduced by the Australian Labour government in 1992.
 - All income support payments to people of state pension age should become means-tested when the new system is fully operational.
 - State disability insurance schemes are important exit routes from labour markets. Experience of various countries suggests that these are abused. Disability benefits should be reformed to reduce benefits and much more active strategies should be used to assist people receiving disability insurance back into work.
 - Employment protection legislation is likely to be especially damaging to older people and increase early retirement. Older people should be exempted from employment protection legislation not mandated by the EU. One example is to allow no-fault compensated dismissals of workers who are recruited within five years of the state pension age.
 - If they are rigorously enforced, age discrimination laws could raise the risks of employing older people and reduce employment. The government should consider a large-scale pilot in which some firms are exempted entirely from age-discrimination laws, followed by evaluation. Only after evaluation of the impact of

age discrimination laws on the employment of older people should it be decided whether to adopt them as national policy.

- The evidence suggests that a higher degree of union involvement in wage setting ensures that older workers are at a disadvantage compared with prime-aged workers. The government should consequently firmly refuse to grant stronger union prerogatives over wage bargaining.
- The benefits of increasing participation rates flow both to the individual – in terms of improved health and increased incomes – and to society as a whole as greater employment at older ages will reduce the costs of ageing populations. Furthermore, less government involvement through state pension schemes, disability insurance and employment regulation increases the ability of individuals to determine their own work and retirement patterns.

Introduction

In the past 50 years, employment rates among the elderly have decreased significantly in OECD countries. Combined with increased longevity and declining fertility rates, this has put immense pressure on state pension systems. The UK is not an exception to this trend. However, since the 1990s, governments have tried to increase the state pension age to create stronger financial incentives for continued work in late middle age. Projections still indicate that this is not going to be enough to stifle the boom in entitlements that will occur as a result of population ageing. Furthermore, a key issue is also to ensure that those under the official state pension age are able to continue working rather than using alternative pathways to retirement at the expense of the state.

The paper begins by discussing what is at stake. Since life expectancy will continue to rise and fertility rates may decline, we face an ageing of the population so that fewer people will have to support more pensioners.

In the following sections the reasons why older people stop working are discussed. The research is conclusive in that nearly all papers find a relationship between financial incentives within state pension systems and retirement. The evidence also suggests that state disability insurance or disability pensions are often used as alternative pathways to retirement and induce labour market exit among people who would otherwise be working. General employment protection laws appear to negatively affect employment among older people

and, while the research on age-discrimination laws is admittedly somewhat mixed and rather scarce, some research suggests that these hurt the employment prospects among older workers as well. In addition, tax rates on work and employers, as well as a higher degree of unionisation in the economy, tend to decrease employment prospects for the elderly.

The paper also addresses some common concerns surrounding a policy of inducing people to work longer. There is no evidence for the common fear that increased employment rates among the elderly would lead to a decline in employment among younger workers. Furthermore, there is little evidence that people would not be healthy enough to work longer or that working longer would make them less healthy – indeed, the evidence points in the other direction.

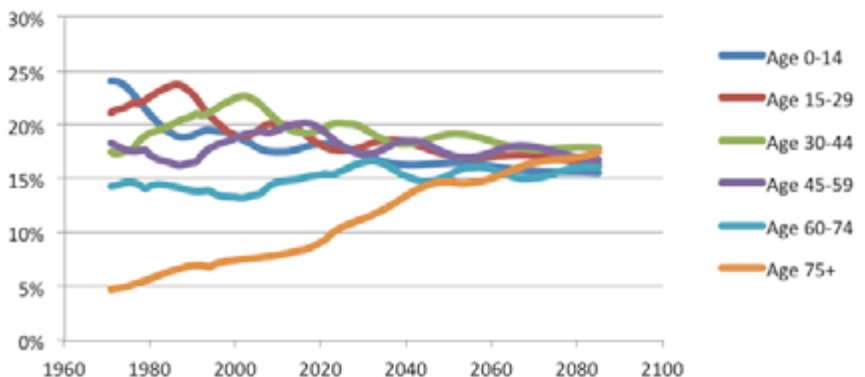
The paper concludes with policy recommendations. In general, tying the state pension age to life expectancy would be a good way to induce higher labour force participation. Secondly, since public pension schemes crowd out personal savings and also produce incentives to retire earlier, it would be highly advantageous to move towards a privatised pension system in which citizens are given more responsibility to save for their own retirement. This means that any payments from the government to people at older ages would be means-tested. This would be similar to the reforms introduced by the Labour government in Australia in 1992. Thirdly, policymakers should remove general obstacles to employment in old age, including employment protection laws. Given the somewhat mixed research on age discrimination laws, it would be beneficial if the government investigates their effect further by creating a pilot scheme in which some firms are exempted from such laws. After evaluation, it could then be decided whether or not to adopt such laws nationally. Unemployment benefit and disability insurance systems should also be reformed to discourage people from using these programmes as alternative retirement paths. Since unionisation appears to harm older workers too, the government should resist calls for stronger union rights in the economy. The aim of policy in general should be to ensure that people are not artificially discouraged from working in older age.

It is important to make clear that working at older ages is not regarded as necessarily good in itself. Leisure is a positive good, though working also brings health benefits as is discussed later. However, the structure of state pension systems in the West ensures that individuals have incentives to retire before the age they would wish to retire if they faced the costs of their decisions themselves. Furthermore, employment protection legislation might, in fact, prevent people from working who would like to supplement their retirement income with income from work.

What is at stake?

In recent decades, significant increases in life expectancy and declining fertility rates have altered the 'demographic pyramid' quite significantly. As Figure 1 shows, the share of older people as a percentage of the entire UK population has increased and is projected to do so even more rapidly in the future. In 2040, for example, it is estimated that 29 per cent of the population will be aged 60 or older, up from 23 per cent in 2012.

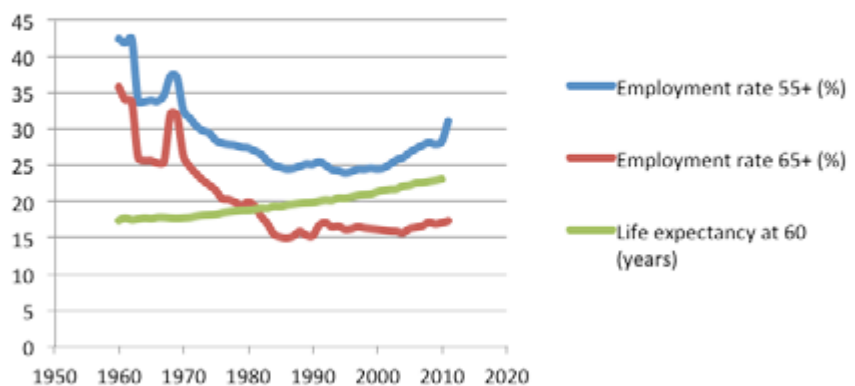
Figure 1: Actual and projected age distribution in the UK, 1971-2085



Source: ONS (2012)

Yet these demographic changes have not been accompanied by an increase in the labour force among the elderly which would be necessary to keep the burden of state pension schemes stable. Figure 2 shows the significant reduction in the employment rate among older people in the OECD as well as the general trend towards higher life expectancy. While employment rates have increased in the past two decades, they are still far from the levels in 1960.¹ This applies to the UK too. As Banks et al. (2011) show, the employment rate among men aged 55-59 decreased from over 90 per cent to less than 70 per cent between 1968 and the end of the 1990s. The figures for men aged 60-64 and men aged 65-69 slumped from around 80 per cent to 50 per cent and 30 per cent to about 15 per cent respectively. After that, however, the trend has pointed upward, and the employment rate in 2008 was about 80 per cent for males aged 55-59, 60 per cent for males aged 60-64 and 20 per cent for males aged 65-69. Nevertheless, not only does this not reverse the earlier decline, employment rates among the elderly should have increased since the 1960s to reflect increasing life expectancy and health. Today people have shorter working lives than at the end of the 1960s.

Figure 2: Employment rates and life expectancy in OECD countries



Source: OECD (2012)

1 The figure is constructed from the weighted OECD average as reported in the database.

The EU has a particularly poor record for labour market participation. Table 1 shows inactivity rates for selected countries in the age range 55-64. In Italy, for example, 60 per cent of 55-64 year olds are inactive, a very high figure that is 8.4 percentage points above the EU average. The UK does relatively well, with only around 40 per cent of 55-64 year olds inactive, but the figure is still high. In Switzerland, employment is around 70 per cent of the workforce in the 55-64 age group, and both the US and Japan also have higher employment rates than the UK.

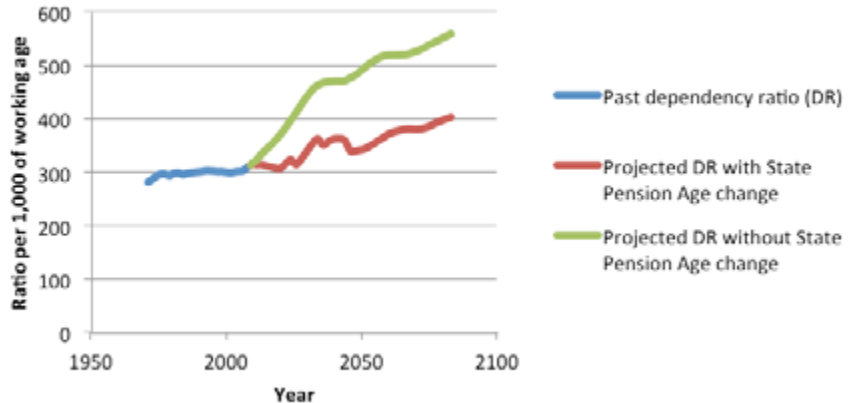
Table 1: When to retire?

Inactivity rate 2012 (55-64)	
Italy	59.6%
France	55.5%
EU average	51.2%
Ireland	50.7%
UK	41.9%
USA	39.3%
Japan	34.6%
Switzerland	29.5%

Source: Eurostat (2013)

This situation puts pressure on state pay-as-you-go pension systems. Due to the changes in the age structure depicted in Figure 1, the age dependency ratio will increase. This is displayed in Figure 3 which shows more people who have reached the state pension age will have to be supported by relatively fewer people of working age. While recent changes to the state pension age have ameliorated this change they have not neutralised it. For example, by 2040, the dependency ratio is projected to increase by 17 per cent compared with that in 2008.

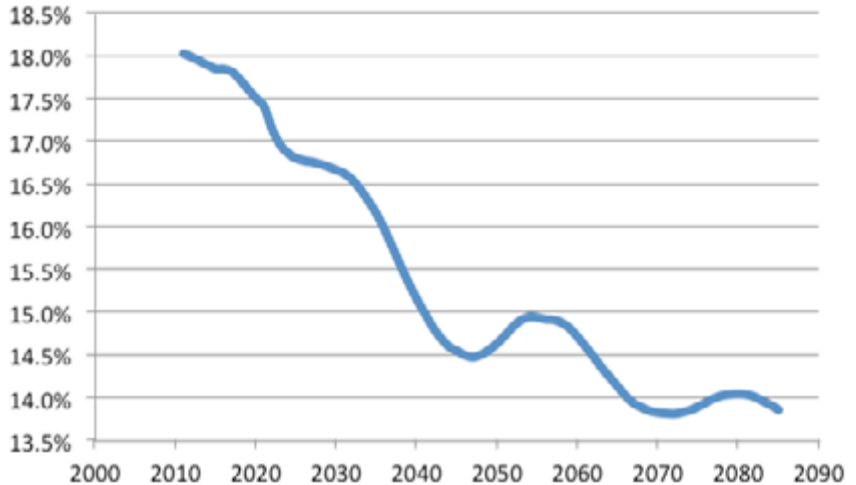
Figure 3: Age dependency ratio in the UK



Source: ONS (2012)

Of course, as noted above and as is clear from Table 1, not everybody works until the state pension age so even changes to it do not resolve the problem entirely. It is therefore important to analyse the potential trajectory of the actual employment rate. Figure 4 displays what would happen to the employment rate among people aged 60+, assuming that the employment rate in 2011 in the different age groups is maintained but that projected changes in the age structure occur. The figure indicates a drop by about 3.5 percentage points between 2011 and 2045. The trend indicates a further decrease until 2083. Thus, reforms to increase the employment rate amongst the elderly are urgent to stem the projected fall and to reverse past changes.

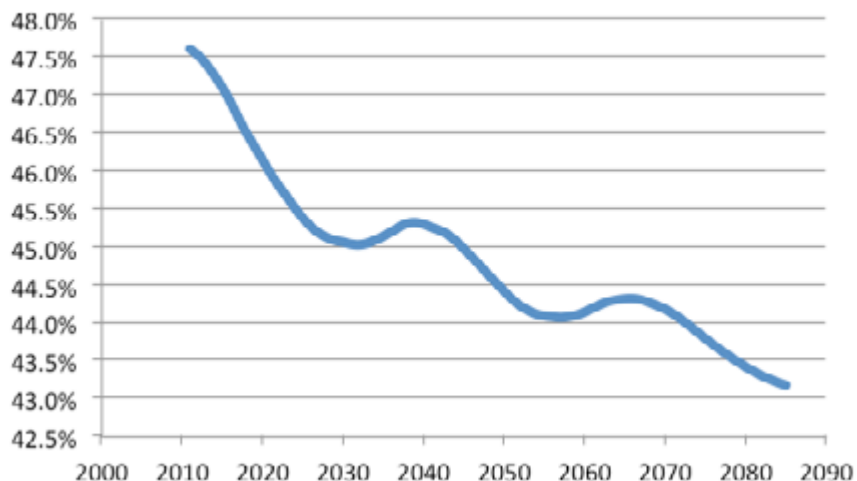
Figure 4: Projected UK employment rate (60+) as population ages



Source: Author's calculations using data from ONS (2012) and OECD (2012)

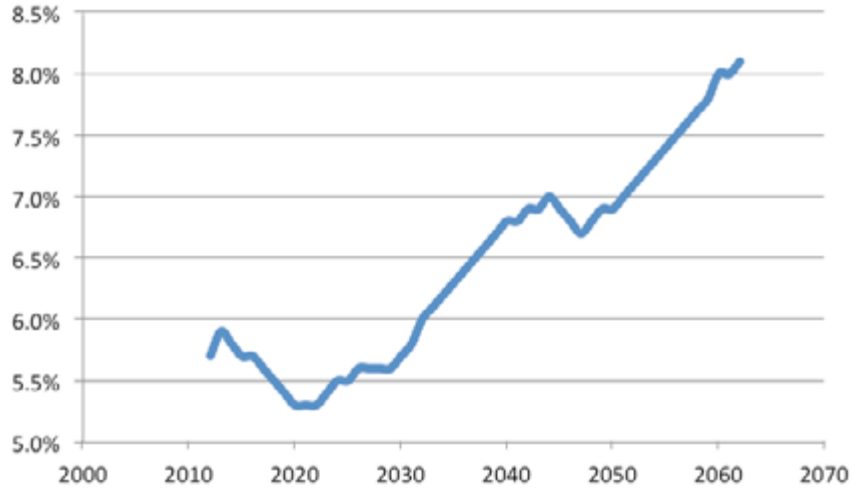
Naturally, this also has implications for the overall employment rate in the country. As more people move into the cohorts where labour market participation is lower, overall employment rates will fall. Figure 5 displays this trajectory, indicating a drop by about 2.6 percentage points between 2011 and 2045. The trend indicates a further decline by 2083. Since such a high percentage of older people who have not yet reached the state pension age are currently not working, and since the age dependency ratio will increase significantly even when taking into account proposed reforms to state pensions, those reforms are no panacea.

Figure 5: Projected employment rate (15+) as population ages



Source: Author's calculations using data from ONS (2012) and OECD (2012)

The changes in age structure and the age dependency ratio will also have implications for how much the government will spend on pension benefits. Figure 6 shows how UK state pension expenditure as a percentage of GDP is projected to change in the future, taking into account recent changes to the state pension age. The figure shows that, despite reforms, state pension expenditures are expected to increase by 2.4 percentage points of GDP between 2012 and 2062, which is an increase of 42 per cent as a proportion of national income. Furthermore, these figures do not take into account the money spent on people who use alternative income support programmes as *de facto* retirement schemes.

Figure 6: Projected UK state pension expenditure (% of GDP)

Source: Department for Work and Pensions (2012)

The following sections explore the reasons for the low participation rates and the policy options that could induce people to continue at least some form of paid work at older ages.

Why do older people have low labour market participation?

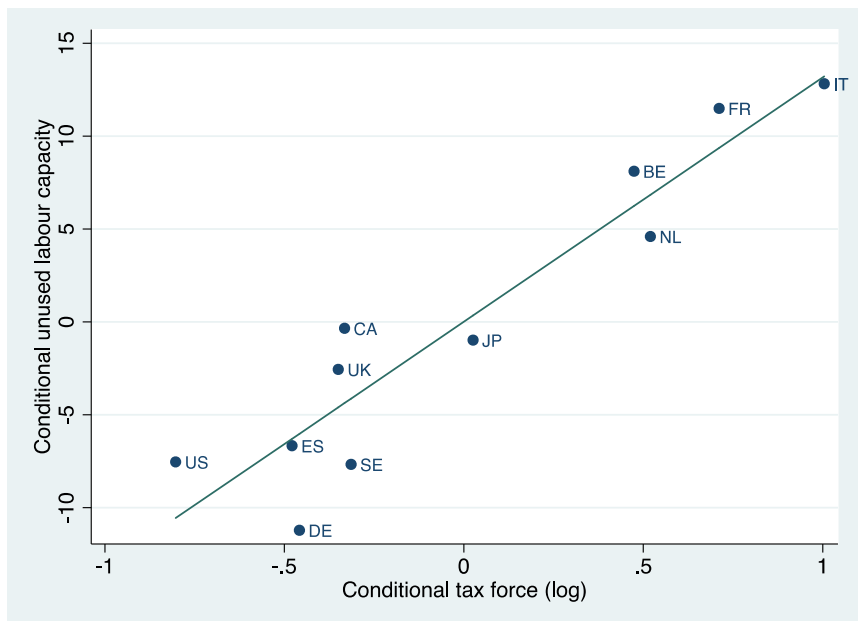
In order to increase employment rates among the elderly further, it is necessary to understand why people do not work in the first place. A key issue is the incentives they face. Due to the existence of state pension schemes, it is clear that people have strong incentives to retire when they reach the state pension age. Additionally, alternative pathways through early and disability retirement as well as unemployment insurance often induce labour market exit prior to the official state pension ages. This section discusses the research analysing the factors responsible for the changes in the labour force participation rate among older people in the developed world.

Evidence shows that the state pension system decreases incentives to work

Research is clear that the financial incentives to retire arising from state pensions are important for the changes in labour force participation noted above. In an extensive project covering eleven industrialised countries, for example, Gruber and Wise (1999; 2004) conclude that, if there is to be an increase in the labour force participation rate, there will have to be changes to state pension systems. Simulations indicate that delaying pension benefit eligibility by three years would increase labour force participation among men aged 56-65 by up to 36 per cent. This strongly suggests that retirement is significantly affected by the financial incentives built into countries' state pension systems.

Using Gruber and Wise's figures regarding the 'tax force' – the average of various incentives built into the social security systems – and unused labour capacity among men for 11 industrialised countries in 1999, Figure 7 displays the relationship between these two variables (holding constant differences in health and employment opportunities). The relationship is very strong, thus suggesting a powerful role for public policy when it comes to labour force participation among the elderly, when taking into account differences in health and employment opportunities.

Figure 7: The relationship between incentives and unused male labour capacity



Sources: Gruber and Wise (1999) and OECD (2012)

Similarly, Hurd, Michaud and Rohwedder (2012) analyse multi-country data, and find that state pension wealth has a strong impact on the average retirement age. An increase of 10 per cent in public pension wealth decreases the average retirement age by 1.5 per cent. Intriguingly, the difference in pension wealth can explain 50 per cent of the difference between the UK's and the Netherlands' average retirement age. This further indicates that state pension systems may depress labour force participation among older workers.

The above research only analyses labour force behaviour at one point in time. It might also be important to analyse whether changes in retirement policies over time are related to changes in the labour supply within countries over time. Some research has examined this. Blöndal and Scarpetta (1998) find that removing disincentives to work could increase labour force participation rates among 55-64 year olds by 4-6 percentage points. Johnson (2000) finds no evidence that labour force participation trends predict extensions of the state pension system, but does find evidence of the reverse. The results indicate that 34 per cent of the reduction in labour force participation among men aged 60-64 up until the 1970s can be explained by changed incentives within the state pension systems, but that they do not explain trends thereafter. However, Duval (2003) uses a larger panel and finds that overall tax disincentives to continue working reduce labour force participation among elderly men also from the 1970s onwards. The estimates suggest that 'a 10 percentage point decline in the implicit tax rate reduces the fall in participation rates between two consecutive (five-year) age groups of older workers by about 1½ percentage points' (Duval, 2003: 35).

In a more recent paper, Bloom et al. (2009) provide a more thorough analysis of different factors in the state pension system that may be important for labour supply. They analyse panel data for 40 countries in the period 1970-2000 and find important effects of changes in pension systems. Overall, the estimates suggest that an increase in the eligibility age by five years, a reduction in allowed early retirement by five years, increasing the deferral benefit by 3 per cent per year, and switching from 80 per cent defined benefit to 80 per cent defined contribution pension provision would raise

the average retirement age by 5.1 years. This paper clearly shows that a coherent reform package has the potential to increase labour supply among the elderly significantly.

Fischer and Sousa-Poza (2009) have used cross-national micro-level data in ten European countries to analyse the impact of pension generosity on retirement decisions. Despite holding constant country-specific effects and trends as well as time trends, they find that changes in the average replacement rate and decreases in wealth accrual have increased the probability that people will retire earlier than the state pension age from about 16 per cent in 1967 to 63 per cent in 2004. In combination with the cross-national aggregate relationships above, the international micro-level evidence thus strongly suggests that pension generosity has substantial impacts on labour supply in Europe.

Recent country-specific research also corroborates the idea that incentives matter strongly for labour force participation. In Italy, Belloni and Alessie (2009: 586) find that: 'when employees become eligible for pension benefits, the change in financial incentives they experience is so great that their retirement probability increases by 30 percentage points'. In Germany, Fouarge and Schils (2009) find that early retirement schemes discourage older workers from participating in on-the-job training programmes. In addition, they display some evidence that such training programmes can increase the elderly's labour market participation rates. At the same time, Hanel (2010) finds that a German reform that reduced benefits permanently for early retirees by 0.3 percentage points for every month prior to the state pension age induced a delay in benefit claiming by 14 months on average and induced a delay in employment exit by 10 months on average.

In Switzerland, Hanel and Riphahn (2009) analyse a pension reform and find that a permanent reduction in retirement benefits by 3.4 per cent produces a decline in retirement probability of 50 per cent. Among US workers, Coile and Gruber (2007) also find that social security incentives in America induce retirement. Mastrobuoni (2009) found that cohorts affected by an increasing state pension age

raised their retirement age by about 50 per cent of the increase in the state pension age. Behaghel and Blau (2012) analyse the same reform, and find that it also seemed to decrease exit from employment, although the impact is not as strong as for benefit claiming. Analysing a reform that decreased workers' social security benefits, Vere (2011) finds that US workers are sensitive to the level of their social security income. The estimates indicate that a \$1,000 reduction in non-labour income increases average hours worked per week by 27 per cent. And in Spain, research also finds that reforms that made access to benefits stricter decreased the retirement probability among workers (Vegas et al., 2009; García-Perez, Jiménez-Martín and Sánchez-Martín, 2010). Meanwhile, Euwals, van Vuuren, and Wolthoff (2010) analyse reforms that made Dutch early retirement less generous and more actuarially fair. The changes were made at different points in different industries, allowing the authors to estimate the effects more rigorously. They found that the reforms induced workers to postpone retirement.

Apart from straightforward government-provided benefits, some research also evaluates the retirement effects of financial incentives from employer-mandated severance payments. Manoli and Weber (2011) find that such payments in Austria have clear effects on retirement behaviour, but that the effects are not very strong. However, since individuals obtain government pension benefits as well, the marginal utility of a severance payment may not be large enough to elicit strong responses. Indeed, other Austrian research finds that individuals do respond to financial incentives quite strongly. Staubli and Zweimüller (2011) find that recent increases in the Austrian early retirement age reduced retirement by 19 percentage points among older men and 25 percentage points among older women. Overall, this led to an increase in employment by 7 percentage points among men, and 10 percentage points among women.

However, it is important to take into account different retirement routes when reforming state pension schemes. It may be possible to cut off one retirement route whilst other less straightforward routes are available. In Australia, Atalay and Barret (2012) find that a pension reform programme that increased the pension eligibility

age for women decreased the probability of retirement, as would be expected. The estimates suggest that a one-year increase in the eligibility age generated an increase in the female labour supply by about 10 percentage points among women aged 60-64 and 55-64. At the same time, however, there is also a significant replacement effect on participation in other government programmes, such as disability pensions. Findings from the Dutch health care sector, on the other hand, show that when both early retirement schemes and disability insurance (DI) were reformed (almost simultaneously), the probability of retirement decreased and the probability of continued employment increased while the probability of entering disability insurance did not increase (Euwals, van Vuren and van Vuuren, 2012).² The importance of taking into account substitution effects when reforming pension systems aimed at boosting employment rates will be discussed further below.

Some research indicates that the type of financial incentive is important for people's retirement responses. Brinch, Hernæs and Jia (2012) find that abolishing an earnings test in Norway, which had reduced retirement payments for those in employment, led to a reduction in the effective tax on labour income following retirement from 70 per cent to 45 per cent and this had strong effects on labour supply among men aged 67. Furthermore, taking all taxes into account, the reform was basically self-financing since people began working more after the effective tax cut. Another change ensured that people who had worked continuously since 1967 could no longer increase their state pensions by continuing paid work until the age of 70. Unlike the earnings test, this change did not alter people's behaviour, perhaps because people did not understand the system well enough as the design of this rule was complex.

2 The authors discuss previous research from the Netherlands, which found evidence of a substitution effect, arguing that their results 'support the hypothesis that the reforms have stopped such substitution and [disability insurance] is no longer used for early retirement' (Euwals, van Vuren and van Vuuren, 2012: 118).

Evidence from reforms that have increased incentives to retire

As the above research shows, many countries have brought forward reforms that have decreased incentives to retire in recent years, thus reversing the general post-war trend. Much of the empirical evidence based on specific events relates to such reforms. However, there are also some examples of reforms that increase financial incentives to retire. In the Ukraine, the legal minimum pension was increased radically, by 350 per cent, in the early 2000s. Danzer (2010) finds that the reform led to an increase in the individual retirement probability at the state pension age by 30–47 per cent, with the aggregate effect amounting to a fall of 2.4 per cent of the pre-reform labour force. In Norway, Vestad (2012) analysed a reform that decreased the early retirement age and found that about 66 per cent of early retirees would still have been working at age 63 had the age limit been 64 instead of 62.

Conclusion

Overall, the research displays a pretty clear picture: people do respond to economic incentives, and changes in the state pension system can induce more labour force participation among the elderly. At the same time, some research indicates that participation in other income replacement government programmes may increase as a result of tightening eligibility for the regular state pension system (while other research suggests that this can be prevented by simultaneous reforms of those programmes). This suggests that policymakers need to be aware that people can over-use alternative government programmes such as disability pensions and unemployment insurance to exit the labour market in the absence of retirement pension pathways. As Blöndal and Scarpetta (1998: 8) argue: ‘Establishing a neutral retirement system is a demanding task. In most countries it involves changing both the old-age pension system and the various income-support programmes which can be used as *de facto* early-retirement schemes.’ The next section analyses the formal evidence surrounding such programmes.

The impact of disability and unemployment benefits on employment at older ages

As noted, while the state pension system affects retirement, there are other mechanisms at work too. Retirement through DI, disability pension schemes and unemployment insurance are among the most important ones. The idea of disability retirement is to give workers in ill health an opportunity to get respite from work. Yet such programmes may also be used as *de facto* early retirement programmes by healthy people who would otherwise be in employment. There are clearly principal-agent problems and moral hazard involved in these programmes. This is because it is very difficult for the government (principal) to assess whether the individual (agent) is actually fit for work. Secondly, the more people use such pathways to retirement, the more their use is likely to become culturally accepted – thus spurring more people to use them. Indeed, individuals may very well be affected by lax cultural attitudes towards disability insurance, meaning that they believe they are unfit to work even though this might not be the case. Swedish research, for example, displays that neighbours' propensity to take sick leave affects other individuals' propensity to do so as well (Lindbeck, Palme and Persson, 2009). Such group effects may very well lead to state disability insurance and pensions being used to exit the labour market prematurely.

The research indicates that this is, in fact, a problem. The proportion of men collecting disability benefits at age 45 is roughly the same

in Italy, Spain, Germany, Sweden, Belgium, Canada, France and the Netherlands. Yet among men aged 64, where differences in programmes are greater, there are large differences between the experiences of different countries. For example, in Sweden, where official early retirement routes are quite scarce, over 35 per cent collect disability benefits, whereas the figure in Italy is less than 10 per cent. And as Milligan and Wise (2012: 2) argue: 'It is implausible that the rate of physical disability varies so much among these industrialized countries.' The authors go on to show that there is virtually no relationship between overall mortality rates and disability insurance participation. Furthermore, they examine various natural experiments through policy reforms and find evidence that DI programmes can have substantial impacts on labour force participation among older people.

The above paper is part of a larger collection of studies, which evaluate the relationship between DI, health and employment in Western European countries as well as in the USA, Canada and Japan. The within-country evidence from these papers generally supports the hypothesis that DI often serves as an alternative pathway to retirement. The evidence also suggests that changes in health cannot explain the developments (Wise, 2012). As Boersch-Supan and Juerges (2011: 20) put it: '[D]isability insurance...is largely unrelated to mortality or measures of health status over time and in a cross-national comparison'.

This certainly applies to the UK. Banks et al. (2011) find evidence that a reform in April 1995, which reduced the generosity of disability benefits and increased eligibility requirements, led to decreased retirement probabilities among men aged 50-64 and reduced inflows into disability insurance. Policymakers, therefore, should clearly take DI into account when devising policies to induce older people to work longer.

Other research focusing on people aged 45-65 also supports the above conclusions. Gruber and Kubik (1997) exploit differences in US states' DI programmes to estimate whether employment rates among male workers aged 45-65 are affected by the stringency of

eligibility requirements. The authors find that a 10 per cent increase in denial rates raises the labour force participation rate by 2.8 per cent. Using a discontinuity in the likelihood of DI applications being accepted at the ages 45, 50 and 55 among certain classes of applicants, Chen and van der Klaauw (2008) find that American male and female workers who were just above the cut-off points had a 20 percentage point lower labour force participation. This impact is about 6-11 percentage points in the case of the age 55 cut-off point. The long-term impact, however, decreases to 5-9 percentage points suggesting that a number of people who enter a DI programme do re-enter the labour market.

Nevertheless, the above papers do not take into account that people often appeal if they are rejected and this biases estimates. The only study to take this into account appears to be a recent contribution by Maestas, Mullen and Strand (2012). The authors find that receipt of DI causes a 26.6 percentage point reduction in employment among workers aged 45-64. Overall, therefore, the research displays that DI is an important factor in explaining low employment rates among older people.

So research clearly indicates that disability insurance in general has an important negative impact on labour force participation among older workers. What about disability pensions? A paper using a natural experiment in Germany examines their impact. Analysing a legal change that made it somewhat easier to claim disability pensions, Hanel (2012) finds that changes in benefit levels do not affect labour market behaviour, but that the shift in the implicit tax rate of employment has a significant impact. A decrease in the implicit tax rate on labour market income by 1 percentage point generates a decrease in the likelihood of people entering disability retirement by 2.1 per cent. By enabling people to retire earlier, therefore, disability pensions may induce lower employment rates among older people. The effect is only present among people in better health, suggesting that healthy people do use disability pensions as alternative early retirement schemes.

Most research focuses on individual incentives and ignores spill-over effects between spouses. However, Johnsen and Vaage (2012) use a Norwegian policy reform as a natural experiment, and find that wives' likelihood of receiving a disability pension increases significantly when their husbands become eligible for early retirement benefits (and the wives are not eligible for early retirement). This effect is so strong that it accounts for 50 per cent of wives on disability benefits two-to-three years after the husband became eligible for early retirement benefits. Moreover, the researchers analyse the impact of husbands' *actual* early retirement decisions. Being eligible for early retirement benefits is not the same thing as actually retiring early, and the impact on wives receiving a disability pension should be larger if the husband is actually receiving an early retirement pension rather than simply being eligible for one. This is, indeed, the case. Similarly, Hesselius (2009) analyses Swedish panel data, and finds that spouses' retirement increases average sickness absence among women. Spousal old-age retirement increases female average long-term sickness absenteeism by about one week per year, whereas the effect of spousal disability retirement leads to an increase in sickness absenteeism of one week among men and two weeks among women. This research shows that it is important to take spouses' incentives into account when estimating the impact of financial incentives on retirement. It also provides further evidence that disability pensions are often used as substitutes for early retirement.

Unemployment benefit schemes are also used as an early exit route from the labour market. Inderbitzin et al. (2012) find that an Austrian reform that relaxed access to unemployment benefits increased the probability of early retirement. Among workers aged 50-54 who entered the unemployment programme, the reform translated into a 17 percentage point higher probability of early retirement. Among workers aged 55-57, the figure was 10.8 percentage points. A German study, in turn, finds that a reform that decreased the maximum period for which unemployment benefit could be received significantly induced exit from employment among older workers in the period just before the reform took effect. Afterwards, however, exit rates decreased. Among 60-61 year olds, post-reform exits

were 30-70 per cent lower than pre-reform exit rates. At the same time, prime-age workers did not respond to the changes. The authors argue that these different responses are due to the fact that unemployment insurance operated as a pathway to retirement (Grogger and Wunsch, 2012). This is further illustrated by a study that analyses the likelihood of re-employment versus retirement among older non-employed workers in Germany, Italy, Spain and the UK. The evidence suggests that in countries with more generous unemployment insurance, displaced workers are more likely to enter retirement compared with employed workers (Tatsiramos, 2010). This indicates that unemployment benefits often substitute for early retirement in old age and provide a pathway to retirement, making it important to take this into consideration when devising policies to increase labour force participation among older people.

The research is clear that the existence and extent of alternative retirement pathways decrease labour force participation and that it might be more difficult to get older people back into work once they have already used those pathways. For example, Norwegian research indicates that older workers who are close to the state pension age do not respond to programmes that incentivise DI recipients to go back to work, in contrast to younger workers (Ravndal Kostøl and Mogstad, 2012). Also, Swedish evidence indicates that a reform that decreased DI generosity for people aged 60 years or older did not lead to higher employment. Instead, the affected workers drew unemployment benefits or increased sick leave. However, the authors could only estimate the short-run effects (two-to-three years), and it may take some time before people adjust to new rules. Indeed, there is some evidence that employment increases at the end of the period (Karlström, Palme and Svensson, 2008). In general, however, these studies suggest that DI reforms in isolation may not always have strong effects on employment, and that coherent reforms to the overall benefit and pension systems might be necessary.

It is also the case that careful policy design matters when trying to induce older people to go back to work. Indeed, in the UK, recent reforms appear to have successfully induced older people to return

to work. The recent Pathways to Work Programme, which gave both financial incentives and support to DI recipients to go back to work, induced higher employment rates especially among women aged 40-59 (Adam, Bozio and Emmerson, 2010). Also, in Finland, Ilmakunnas and Ilmakunnas (2011) find that reforms restricting the use of unemployment pensions and early retirement, as well as changing the proportion of the unemployment and disability pension costs borne by the employer, increased hiring rates among older workers. This indicates that it is important to align employer and employee incentives to induce higher employment rates among older workers.

Thus, policy design matters for ensuring that employment rates increase among people who are already claiming DI. Additionally, it is also important to take into account potential policy complementarities. If people are close to the age at which they can begin to draw on pension benefits, it is unlikely that a reduction in DI alone will induce them to go back to work.

Overall, therefore, the research clearly displays that people use alternative government programmes to retire. This, in turn, indicates that it is very important that the UK government changes the overall incentive framework so as to induce actual labour force participation rather than merely changing the programme through which people get their de facto retirement income.

Are employment protection and anti-discrimination laws useful or harmful?

Another important question to consider is how age discrimination laws, and employment protection legislation (EPL) more generally, have an impact on older persons' labour market prospects. With more stringent employment protection laws, it is highly likely that employers may refrain from hiring older workers out of fear that they will not be able to terminate employment relationships. However, a hiring reduction may be matched by a reduction in firing, meaning that the overall unemployment rate among the elderly may not necessarily increase. Unemployment duration, however, is likely to increase as hiring rates drop. This is likely to hurt older workers the most. As Heywood and Siebert (2009: 11) argue: 'People will spend longer looking for work, and this means particularly the older workers who are a classic outsider group without a relevant track record, and therefore more of a risk than prime-age workers.' In addition, if it is difficult to obtain a job, it is likely that older workers will seek alternative pathways to exit the labour market altogether as they have more opportunities to do so. As such, EPL may hurt older people especially.

In addition, there has been a trend towards adding further employment protection to older workers specifically to ensure that they are not discriminated against because of their age. The EU Employment Directive has given general protection to UK workers, for example. In 2010, the Equality Act also came into effect, which further codifies

anti age discrimination in the UK. As with EPL, while age discrimination laws may make it even more difficult to lay off older workers, it might also make employers more reluctant to hire them in the first place – it is difficult to prove and/or detect age discrimination in hiring especially.

It is questionable whether age discrimination laws can be justified on either ethical or efficiency grounds. For example, unlike other types of discrimination, there are no fixed characteristics that apply to specific age groups and different individuals move in and out of different age groups as time goes by. As Adnett and Hardy (2007: 38) argue: 'One important consequence is that distributive gains which legislation achieves for elderly workers result in losses for otherwise similar, but younger workers.' Age discrimination is thus different from discrimination based on race or gender. Additionally, the idea of using age discrimination to boost employment at older ages by reducing lay-offs may very well be misguided. In Europe, especially, firing workers is already expensive due to EPL, and employers may therefore opt to use voluntary retirement instead of expensive dismissals to reduce the workforce. Arguably, therefore, low employment rates amongst older workers are a product of EPL. However, '[S]trengthening age discrimination legislation related to lay-offs may, in the European context, worsen the early retirement problem as well as further re-distributing wealth to older workers' (Adnett and Hardy, 2007: 39). The issue, of course, is an empirical one. While there is no research on age discrimination laws in the European context, some studies have examined their impact in the US labour market.

With regard to general employment protection legislation, Autor, Donohue III and Schwab (2006) show that specific wrongful-discharge laws in US states, which make it more difficult for employers to fire workers, appear to hurt older workers' employment prospects, both among men and women. In a slightly longer-run perspective, adopting such a law induces the employment rate to fall by 1.5 per cent among older men and 3.6 per cent among older women.

Also analysing general EPL, Bertola, Blau and Kahn (2007) use panel data covering 17 OECD countries, and find that stricter EPL lowers the employment rate among men over 55. The estimates indicate that a one-step increase in EPL, on a scale from 0 to 6, reduces the employment rate among older men by about 5 per cent when conditioning on the unemployment rate among all workers. There is no impact in other age groups or among women. At the same time, there are no effects on the unemployment rate among older men, but EPL increases unemployment among younger workers. This suggests that older people exit the labour force entirely as a result of EPL, rather than register as being unemployed. These findings also square well with the fact that there is little impact of EPL on the *overall* unemployment rate in OECD countries (Nickell, Nunziata and Ochel, 2005; Griffith, Harrison and Macartney, 2007). The authors results are supported by micro-economic research by Kahn (2007), who analyses individual-level data from Canada, Finland, Italy, the Netherlands, Switzerland, the UK and the USA, and finds evidence that EPL increases retirement among older males. In addition, Dorn and Sousa-Poza (2010) find that countries with stricter EPL have higher shares of 'involuntary' retirements among early retirees. Thus, the evidence clearly suggests that older people are worse off as far as employment is concerned when there is stricter general EPL.

Country-specific research also lends further credence to the idea that EPL hurts older workers. In France, firms that lay off workers aged 50 and above have to pay a specific tax that goes into the unemployment insurance system. A reform in 1992 exempted firms from this tax if the workers were over 50 when they were hired. Behaghel, Crépon and Sédillot (2008) find that this reform strongly increased the transition from unemployment to employment among workers aged 50 and over compared with younger workers (though only among men). Indeed, there was a large effect. This suggests that unemployed older workers might well be better off without strong EPL.

Age discrimination laws

What about age discrimination laws more 'specifically? This is especially relevant in the UK given their recent introduction here.

Looking at the period 1940-1980, Neumark and Stock (1999) find that age discrimination laws in the USA actually boosted overall employment slightly among the protected group. Adams (2004) analyses US data from the 1960s and also finds that employment rates increase and the likelihood of retirement declines among people in the age ranges covered by the laws. He finds no negative effects on new hires in general, but among people aged 65 and older there is a large negative impact of the federal Age Discrimination in Employment Act (ADEA). Furthermore, among people above the age ranges protected in all legislation, employment declines and retirement increases.

It should be noted, however, that the above studies could not evaluate the long-term effects of the ADEA due to data availability problems. Enforcement of the ADEA changed the circumstances surrounding state laws due to increased publicity, which may have increased the likelihood of lawsuits. Lahey (2008) finds that state age discrimination laws had no impact on total employment before federal enforcement of the ADEA in 1979. After enforcement, she finds that white males over the age of 50 in states with age discrimination laws were less likely to be hired or separated from their jobs, and they also worked fewer hours per week. The total effect on employment is also negative. She finds that enforcement of the ADEA can explain about 21 per cent of the gap in the number of working weeks between older men in states with age discrimination laws compared with the general population. In addition, age discrimination laws seemed to induce higher retirement rates after enforcement. In general, the effects are only significant among white males with no effects among women and ethnic minorities. This can be explained by the fact that these groups were extremely unlikely to bring lawsuits during the period studied (Causey and Lahey, 2013). Overall, this paper indicates negative total effects from age discrimination laws on employment among older people.

Neumark and Song (2011) have disputed the interpretation of these findings, although it seems unlikely that their preferred interpretation is correct.³ However, it is worth noting (especially given the UK context) that Neumark and Song (2011) also find that age discrimination laws can be important in ensuring that increases in the state pension age translate into increases in employment. In US states with harsher age discrimination laws, but not in those without, increases in the retirement age led to higher employment rates and lower social security claiming. Yet, the finding does not seem entirely robust given other research (using a much larger sample size) which finds that increasing the state pension age decreased the likelihood of workers exiting employment – without holding constant differences in age discrimination laws (Behaghel and Blau, 2012).⁴

3 Neumark and Song claim that the ADEA boosted employment since employment increased in states without their own laws after enforcement. Yet, this is not plausible since Lahey (2008) finds no impact of state laws prior to ADEA enforcement. It seems equally plausible, therefore, that the ADEA made state laws more effective. Second, Lahey's estimates suggest that job separation decreased in states with their own laws, which is plausible given the theory. Yet, if we accept Neumark and Song's interpretation, it would imply that *job separation* also increased because of ADEA enforcement, which does not make any sense. Third, hiring of workers under the age of 50 increased in states with their own laws after ADEA enforcement, consistent with the theory that firms preferred younger workers when state laws became more effective. Thus, Neumark and Song's interpretation seems somewhat far-fetched.

4 Neumark and Song (2012) attempt to disentangle the impact of harsher age discrimination laws on hiring and firing, and find conflicting evidence, but there are some data issues so the authors conclude they do not want to overstate the findings.

Conclusion on employment protection and age discrimination laws

Thus, overall, harsher general employment protection seems to be an important explanatory factor in reducing re-entry into the labour force and is thus a factor explaining employment differences at the age around which people normally retire. Employment protection laws would seem to be unambiguously bad for the employment of older people. Sometimes the effect will be disguised because older people may drift into retirement rather than registering as unemployed. Some older people may be content with part-time working and a looser attachment to a particular employer. Such people may gain little from employment protection legislation whereas middle-age employed people do, at least, gain some benefits in terms of job security to compensate for the costs in terms of reduced employment opportunities. Exempting older people from employment protection laws could therefore bring about unambiguous benefits for some older people.

And while the available research on the impact of age discrimination laws is somewhat mixed, one study finds a significant negative impact on both hiring probabilities and overall employment among older males. Where they are used, as in the UK, to enforce employment protection more rigorously, they could be especially damaging. It is important to note that one study finds beneficial impacts on ensuring that state pension ages actually translate into higher employment rates among the elderly (although this finding is questionable). Yet, as argued above, simultaneous reforms to alternative pathways to retirement may have a similar effect on employment without the problematic features that age-discrimination laws bring.

Other policy-related factors

Apart from incentives within the state pension system and other pathways to labour force exit, it is also useful to examine other general factors determining employment rates among the elderly. One issue concerns general tax incentives. In Sweden, the centre-right government recently introduced an earned income tax credit and a payroll tax credit to try to increase employment among people over 65. As a result, in the year following the 65th birthday, employment among those who were eligible for these effective tax cuts increased by 1.5 percentage points, while annual earnings as a percentage of prior earnings increased by 1.8 percentage points. The effects were primarily concentrated among men, for whom the effect on employment was 2.4 percentage points while the impact on earnings was 3 percentage points. It is probable that the design of the study meant that the effect was under-estimated (Laun, 2012).⁵

Yet, retirement is not only a decision solely made by the employee and incentives can also induce employers to offer early retirement – or otherwise. Hallberg (2011) exploits the fact that Swedish employers' payroll taxes are sometimes progressive with regards to workers' age and wage, producing a larger total cost for employers of older workers.⁶

5 Specifically, the comparison group that was not eligible for the tax credit would become eligible after one year. This means that they might postpone their retirement for that year, and that the new law thus affected their retirement behaviour. If this is the case, the effect of the tax credit is underestimated.

6 This is not the case in the UK; indeed, the opposite is the case.

This, in turn, may very well induce employers to offer early retirement to older workers and employ younger ones for whom the costs are lower. Hallberg finds that a 1 percentage point increase in the non-wage costs in relation to wage costs increases retirement by 6 per cent. This clearly indicates that employer taxes for older workers, by giving incentives to employers to offer early retirement packages, may also induce push effects resulting in higher retirement figures.

Finally, stronger union involvement in the economy in general has been found to be a determinant of retirement. Bertola, Blau and Kahn (2007) argue that union-involvement in wage setting more generally produces the strongest disemployment effects among groups which have an easier time finding alternatives to paid employment. The employment loss among these groups is not as costly for them or the unions, because they can find alternatives that are closer to paid employment than prime-aged workers. Older workers belong to this group because they can enter retirement. The authors find that:

'countries where unions exert a more pervasive influence on labor market outcomes tend to feature relatively low employment levels among the young, older individuals, and women, and relatively high unemployment rates among prime-aged women and possibly, young men. The lack of evidence of union effects on unemployment for young women and older individuals suggests that disemployed individuals in these groups move predominantly into nonlabor-force (education, home production, or retirement) states.' (Bertola, Blau and Kahn, 2007: 863)

General union involvement in the economy may thus be especially problematic when trying to raise the employment rates among these groups.

Are there any negative side effects of raising employment at older ages?

While there are straightforward reasons to expect higher employment rates among the elderly to have positive effects, it is still possible that there will be negative unintended consequences. Here, the two most prominent arguments are evaluated.

Will younger workers be worse off?

In the debate surrounding retirement policies, some people argue that increasing the labour force participation rate among the elderly may lead to increased unemployment among younger and prime-age workers. Indeed, one of the arguments in favour of more munificent state pension provision among politicians was that it would decrease youth unemployment. Take the example of the Job Release Scheme, which was the main early retirement programme in the UK during the 1970s and 1980s. In the Labour Party's 1987 manifesto, voters were promised that: '[The Labour Party] will extend the voluntary Job Release Scheme to men over 60 so that those who want to retire early vacate jobs for those who are currently unemployed' (Dale, 2000: 294). Echoing this assumption, Neil Duncan-Jordan, National Officer at the National Pensioners' Convention stated that: 'As the state pension age rises, we will be making the old work for longer but keeping the young on unemployment benefits, which is a ridiculous way to do things'

(Barrow, 2012). In the *Telegraph*, columnist Theodore Dalrymple (2012) expressed similar concerns by stating that: ‘We want to reduce youth unemployment, and one means of doing so is to get older people to retire, so that young people can climb on to the job escalator’. And Lucy Kellaway (2012) of the *Financial Times* gave further ammunition to the trade-off hypothesis by arguing that: ‘The young can’t advance because everywhere they find my complacent generation is in situ’. One of the arguments against inducing older people to continue working, therefore, is that there will be fewer jobs ‘left’ for younger people.

In its crude version, the argument that older people would be taking jobs away from younger people is known as the ‘lump of labour fallacy’. It assumes that the number of jobs in the economy is fixed. While thoroughly debunked by economists, the argument still shows up in many policy discussions. The problem with such views, of course, is that they ignore that the additional workers also allow the economy to increase and change – with new jobs being created as a result (Economist, 2012). Thus, the crude version of the argument that older workers would increase the unemployment level among other groups in society simply has no basis in economic theory – or, for that matter, in evidence.

A more nuanced approach suggests that, after controlling for population size and demand, the employment rate of younger workers, and other groups, might be affected by the employment rate among the elderly in the short run. This would depend on the substitutability between young and older workers and also on the flexibility of the labour market (Banks et al., 2010). Whether there are any trade-offs between different groups in terms of employment prospects in the short run, therefore, is an empirical question.

What, then, does the evidence say? A collection of papers examining the hypothesis in twelve countries – Belgium, Canada, Denmark, France, Germany, Italy, Japan, the Netherlands, Spain, Sweden, the UK and the USA – as well as a multi-country analysis, finds no evidence that there is a trade-off between the employment rate among older workers and the employment rate among younger

workers (Gruber and Wise, 2010). On the contrary, formal analyses of all the countries suggest that ‘an increase in the employment of older persons is estimated to *decrease* the unemployment rate of youth (and prime age persons) and to *increase* the employment rate of youth (and prime-age persons)’ (Gruber, Milligan and Wise, 2010: 40). These estimates are supported by the results from the countries analysed separately, which also suggest a positive relationship between the employment rate among older workers and the employment rate among other groups. In the UK, for example, the relationship is clearly positive generally, including estimates that evaluate the Job Release Scheme more specifically (Banks et al., 2010). Work examining 22 OECD countries between 1960 and 2004 also finds evidence of a positive relationship between the employment rate among older workers and that among younger and prime age people (Kalwij, Kapteyn and de Vos, 2010).

Whether this positive impact is causal remains to be proven, but there is absolutely no evidence whatsoever in favour of an employment trade-off hypothesis. One possibility is that workers of different ages are complementary: that is, young and prime-age workers benefit from increased economic activity of the elderly. Another possibility is that well-functioning labour markets function well for all age groups.

Health and health care costs

Another argument commonly heard in the UK debate is that people are not healthy enough to work longer. If this were true, one would not expect pension reforms that, for example, increased the pension age to induce higher employment but, rather, produce higher rates of sick leave. Sahlgren (2012; 2013) reviews the evidence related to this issue as well as reporting the results of new research. This finds that, while retirement might have no, or even positive, short-term health effects, it appears to increase the likelihood of illness in the medium to long term. In general, therefore, people seem to be healthier if they continue working rather than spending longer in retirement. This also suggests that the government would actually

be able to decrease, rather than increase, health care spending among the elderly if people were to work longer.

Conclusion and policy implications

When it comes to labour force participation at older ages, financial incentives matter. Any policy should take this into consideration. Since it is clear that the state pension system is key to incentivising full retirement, it is necessary to change it if we are to increase labour force participation. For example, tying increases in the state pension age to increases in life expectancy would help ensure that demographic changes are taken into account automatically within the state pension system and this is a key policy change. Below are specific recommendations for the policy in the UK:

- The timetable for raising the state pension age should be accelerated. From November 2018, the state pension age for men and women should be increased by two months every quarter, thus raising the state pension age to 68 by January 2023.
- From January 2023 the state pension age should be linked directly to increases in life expectation.
- Individuals should be encouraged to save for their own retirement and thus bear the costs of earlier retirement themselves. To achieve this aim, in the long term, a privatised pension system, such as that in Australia, would ensure stronger incentives to work. The Australian system mandates that employers put aside at least 9 per cent of employees' pre-tax earnings into a personal pension fund and there are incentives for employees to save

more. The compulsory part is set to increase in gradual steps to 12 per cent in 2020. Meanwhile, old-age benefits are means-tested so that most people with a full working life do not qualify for them (Agnew, 2013). This system provides strong incentives to work longer.

Reintroducing pension privatisation in the UK may take a generation to complete, but immediate measures could be taken to, for example, allow individuals to make private provision as an alternative to the state pension scheme – thus reversing the pension reforms of the last few years. Whilst a privatised pension system would strongly increase incentives to work longer, there is still an argument for restricting access to the pension funds until a certain age. One problem in the Australian system has been that there are incentives to game the system, since workers can spend down their savings and/or invest them in assets that are excluded from the means test for the state pension. This is especially problematic since the state pension age has been 65 whereas people have been able to withdraw their private funds from the age of 55 (which is now increasing). As Agnew (2013: 4) argues, ‘This...creates an incentive to retire early, live on these savings until eligibility age for an Age Pension, and collect a higher benefit, sometimes referred to as “double dipping”.’ This problem can easily be addressed through better policy design.

It is also clear that disability and unemployment insurance programmes need to be reformed. As the research shows, these programmes often function as alternative retirement pathways. In addition, the existence of such programmes might reduce the effectiveness of other changes to the state pension system. The eligibility requirements for disability and unemployment insurance⁷ must accordingly be tightened, especially among people who are at risk of retiring whilst able to work. Private insurance should be encouraged – or at least not discouraged as a result of benefits paid by state disability insurance schemes.

⁷ State unemployment insurance is a much less important issue in the UK as benefit levels are below the levels of benefits paid to pensioners and also below disability insurance levels.

An important demand-side reform in many countries would be to decrease labour taxes. As it happens, in the UK neither employees nor employers pay national insurance contributions once an employee has reached state pension age so there is a tax advantage from employing individuals at older ages. This national insurance exemption could be extended so that national insurance contributions were reduced as soon as a full state pension had been accrued.

It is also important to reform employment protection legislation which, according to the research, tends to hurt older workers overall, and especially those who are currently unemployed but seeking employment. A good step forward would be to exempt older workers from such legislation when they are hired. This would incentivise employers to take on older people and also enable greater labour mobility and flexible working patterns in old age. One possible reform would be to allow no-fault compensated dismissal of workers who are hired within five years of the state pension age. The risks associated with hiring an older worker relative to a younger one would thus decline significantly, and put the latter on a more equal footing with the former. General employment protection legislation has been shown to hurt older workers, and this must clearly be addressed.

Furthermore, it is desirable to investigate whether age discrimination laws do more harm than good – the evidence so far is somewhat mixed, but some research does suggest that they decrease employment rates overall in the long run. It is important to investigate this further, and it would be desirable for the government to introduce a pilot scheme in which some employers – large and small – are entirely exempted from age discrimination laws that are not mandated by the EU. Economists could then evaluate the labour market outcomes of the pilot scheme before politicians decided whether the laws should be abolished nationally.

In addition, the evidence suggests that a higher degree of union involvement in wage setting ensures that older workers are at a disadvantage compared with prime-aged workers. The government should consequently firmly refuse to grant stronger union prerogatives over wage bargaining.

Reversing the steep decline in employment rates among the elderly since the mid-20th century is not going to be easy. But that does not make it less necessary. People will not, of course, have to continue to work full time until they die – but they should have the opportunity and incentive to continue some form of paid work to diversify their income in old age. The reforms suggested in this paper would go a long way to accomplish that.

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The Institute of Economics Affairs
2 Lord North Street
London SW1P 3LB
Tel 020 7799 8900
email iea@iea.org.uk

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