In almost every industrialized country, population is ageing rapidly. Individuals are living longer while the fertility rate dropped in the last 40 years. These demographic trends place pressure on the financial sustainability of pay-as-you-go pension systems in these countries. They are, besides this demographic trend, confronted with a socio-economic trend of early retirement that further increases the burden on the viability of pay-as-you-go pension systems. While working until age 65 was the rule in most OECD countries in the 60’s, this is now the exception and the effective retirement age is now well below age 60 in some European countries, in particular Belgium.

There are several possible explanations for the socio-economic trend of early retirement in the last decades. The strong retirement incentives in social security programs and occupational pension plans are often cited as one of the most striking ones. Others explain the declining effective retirement age by arguing that the health status of older workers worsened. This explanation is one of the least persuasive ones, which does not mean that health status does not play a role in individual retirement decisions. There is however no convincing evidence that the health of 55-70 year old workers declined over the period in which their retirement age was falling. The evidence suggests instead that their health was improving. Thirdly, some researchers argue that the higher living standards in OECD countries over the last decades generated a wealth effect, increasing

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2 OECD 2006).  
5 As measured by life expectancy at birth, infant mortality, …. in OECD (2007).  
the demand for leisure at older ages. Nevertheless, as noted by Duval(2003), this explanation is not fully convincing either since it would imply an increase of leisure during working life. Yet, in the previous decades, declines in working time are modest in comparison with the strong fall in effective retirement ages. A fourth explanation\(^7\) for early retirement can be found on the demand side of the labour market. Up to now, few studies analysed early retirement as a consequence of firms profit-maximizing behaviour. Firms may actively use wage and pension structures to influence or even determine workers’ retirement decisions. This paper will focus instead on the labour supply side. In particular the strong retirement incentives in pension systems and their possible impact on the retirement behaviour and government budget in Belgium constitutes the first object of analysis of this paper.

At the time that the impact of these retirement incentives on retirement behaviour is getting understood, proposals arise to reform pension systems in a way to alleviate the work disincentives\(^8\) and to enhance the financial sustainability of pay-as-you-go pension systems. Less attention has however been given to the impact of these reforms on the income inequality or poverty among the retired\(^9\). Moreover most of the opponents of such reforms argue these would have adverse effects on the income distribution. What we try to show instead, as a second objective of this paper, is that those reforms that encounter a high resistance among the population\(^10\) are not only the ones that increase the size of the cake but are also the ones that divide the cake in most equal slices.

This paper lies in the line of Gruber-Wise(1999) who show in a first stage of an international NBER research project that in OECD countries social security provisions place a heavy tax burden on wages past the early retirement age. In a second stage,

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Gruber-Wise 2003) affirm a causal relationship between retirement and social security incentives to quit work and predict the effect on retirement of two illustrative reforms of social security provisions. Pestieau-Stijns(1999), Dellis-Desmet-Jousten-Perelman(2003), Desmet-Jousten-Perelman-Pestieau(2003) conduct the analyses for Belgium. We deviate from this work in two ways. In a first place we consider, in addition to their impact on retirement behaviour and government budget, the redistributive impact of reforms in the Belgian old-age pension system in more detail. In a second place, since we are not constrained by the imperatives of an international comparative analysis, we address other types of reforms recently discussed and implemented in Belgium.

The reforms that will be considered are threefold. In a first reform, old-age pension benefits are adjusted by 5% for each year the retirement age deviates from the normal retirement age 65 in the window 60-70 (="5%adjustment reform”). In a second reform, 2) gross old-age pension benefits are adjusted with a lump sum amount of money for each age of retirement deviating from the normal retirement age of 65(="lump sum reform"). In order to draw comparisons with the 5% adjustment reform, the lumpsum amount is chosen such that, under the hypothesis of no labour supply adjustments, it has the same budgetary impact as the 5% adjustment reform. Although the presumed budgetary impact and predicted retirement age of these two reforms go in the same direction, the lumpsum reform is interesting since it has different effects on the income distribution of the elderly than a proportional adjustment of benefits. In addition to these two reforms, the results of the recent implementation of the so-called “pension bonus” in the Belgian old-age pension system will be discussed (=“bonus reform”). The belgian government wants people to work longer but has not the courage to penalize early retirement for reasons of political economy. In this reform scenario gross pension benefits are increased by 300 euro on a yearly basis for each year of retirement after age 60 in the window 60-65. The bonus applies, as the other two reforms, only to the bismarckian part of pension benefits, not to the means-tested assistance.

Although the amount of the bonus is not directly comparable with the ones of the other two reforms, it remains an interesting exercise since the sign of the income effect of the
bonus differs from that of the two other reforms. Indeed, although the substitution effect leads in the three reforms towards delayed retirement, the pension bonus generates an income effect that induces early retirement while the 5% adjustment and lumpsum reform generate instead an income effect that delays the retirement decision. The predicted retirement age and budgetary impact for the government are thus expected to be different. Furthermore, the bonus has a different redistributive impact as the two other reforms since it increases instead of decreases the distance between the bismarckian part of pension benefits and the means-tested benefits.

Through the use of a large administrative dataset, it was shown that the Belgian old-age pension system provides strong incentives towards retirement at the age of eligibility. The adjustment of pension benefits by 5% and the lumpsum reform reduce substantially these retirement incentives while the effect of the bonus is limited.

Further, the impact of these reforms on the retirement age, government budget and income distribution of the retired was examined. The 5% adjustment reform and the lumpsum reform increase the retirement age with 1.5-2.5 years. They reduce government expenditure on old-age benefits with 6-8% and increase government revenues from payroll taxes with 16-28%. The mechanical effect would have reduced pension benefits with 9% but since people change their labour supply and work longer in response to this reform, the net effect is limited to 6%. This contrasts with the pension bonus. Since the amount of the bonus is so low and due to offsetting income and substitution effects, it only increases retirement age with 0.2-0.4 years and has practically no effect on the government budget.

Ultimately the redistributive impact of these reforms was examined. In total, taking the mechanical and behavioural effect together, the 5% adjustment reform leads to the lowest degree of income inequality among the retired. This is a rather surprising result that has mostly to do with the fact that the 5% adjustment reform and lumpsum reform increase the number of people relying on means-tested benefits but the bonus instead increases the distance between those who have a larger part of Bismarckian pension benefits with those
relying only on means-tested benefits. The 5% adjustment reform is thus not only the reform that increases the size of the cake but also divides it in most equal slices.

*Keywords:* ageing policies, income redistribution, pension reforms, micro-simulation