RAISING THE AGE OF RETIREMENT: AN EXAMPLE OF POLITICAL RATCHET EFFECT

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1. Introduction

It is expected that by the year 2050 Europeans (EU15) will live about five years longer than today. Given that today's remaining life expectancy at 65 is almost 16 years for men and 20 years for women, an increase of 5 years will raise the cost of providing the same pension level by 25 to 30 per cent. This remark is compounded when observing that if 65 is the statutory age of retirement in most countries, the effective age at which individuals cease working is lower: 59.9 in the EU15. For men, this figure ranges from 57.8 in Belgium to 63.1 in the United Kingdom. In the absence of reforms such changes will put at risk the sustainability of European pay-as-you-go pension systems.

An obvious response to increased life expectancy would be to raise the retirement age, both the statutory and the effective ones. Yet, Tanzi and Schuknecht (2000) stressed that the generosity of policymakers in the pension area is reflected by the fact that since 1970, the effective retirement age has declined in several industrial countries while life expectancy has increased significantly. Why are policymakers so generous and why have they been unable to maintain a reasonable balance between life expectancy and retirement age? First, increasing eligibility and real benefits in pay-as-you-go pension systems is not very costly in the short term, since budgetary imbalances, as measured by general government deficit, will only unfold in the longer term. Second, there has been a strong support in the public at large for social protection, which certainly contributed to increasing government size. Increased life expectancy brings about a gain for those who will benefit from pensions paid over a longer period of time and are reluctant to accept cuts in what they perceive as entitlements.

The support for generous pension systems seems to be well established in Europe. All recent surveys indicate that the majority of Europeans, including the young ones, intend to retire between 56 and 60 and very few expect to be still on the labour market after age 65. It is thus not surprising that a number of governments, particularly in countries where the effective age of retirement is especially low, have

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been unable to raise the age of retirement. We have here a good example of a policy which is desirable from most viewpoints – social welfare, majority choice – and yet cannot be implemented. In this paper, we present a simple model explaining such a resistance to change or, to put it another way, such a bias towards *status quo*. Then we quantify the extent of the problem by calculating for a number of European countries and several years the length of expected retirement. Our objective is to find what are the determinants of an ever increasing length of retirement that is clearly unsustainable.

Our main result highlights the role of preferences in the resistance to reforms. Based on survey data, we identify different attitudes towards pensions in European countries, which can be divided into two groups: a group characterised by a bias towards status quo and a group more open to reforms. This group dummy is shown to explain part of the "inefficiency" in public pension spending, as identified from the estimation of a best practice frontier.

From a policy perspective, the main challenge therefore is to make voters aware of the consequences of the status quo strategy for the sustainability of pension systems. In this respect, long-term pension projections[1] may increase awareness in the public at large and makes it easier to reach a consensus on the need for pension reforms.

The paper is organised as follows. Section 2 sets out a simple theoretical model showing that reforms that would *ex post* be beneficial for a majority may be voted down *ex ante*. Section 3 examines the length of retirement from both a cross-country and a time series perspective, pointing to a general increase in the length of retirement over the past four decades. Section 4 proposes a simple model of retirement, explaining the difference between the effective and the optimal age of retirement, as derived from the estimation of a best-practice frontier.

2. A simple theoretical model

We consider a two-period OLG model with three types of individuals:[2] type 1 has productivity w_L and a poor health denoted by γ_L; type 2 has the same productivity but a good health $\gamma_H (> \gamma_L)$; type 3 has a higher productivity than the two other types $w_H (w_L)$ and a good health γ_H.

Individual utility depends on first and second period consumptions, *c* and *d*, and on the age of retirement, *z*. It is represented by the following separable and quasi-linear form:

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1 The reports published by the Economic Policy Committee provide benchmarks for assessing challenges posed by population ageing in Europe (EU15). See Rother, Catenaro and Schwab (2004) for a study on ageing and pensions in the euro area.

2 This model was initially presented in Fenge and Pestieau (2005). See also Cremer *et al.* (2004) for an approach with a non-linear scheme.

Individuals' Types

Types	1	2	3
Productivity	*Low*	*Low*	*High*
Health	*Poor*	*Good*	*Good*

$$U(c,d,z) = u(c) + \beta u\left(d - z^2 / 2\gamma\right)$$

where β is the time preference factor and γ is a health factor. For further use we denote $x = d - z^2 / 2\gamma$, $\gamma_H = 1$ and $\gamma_L = \gamma < 1$ and the proportion of each type is given by π_i. The government provides everyone with a flat benefit *p* that is financed by a payroll tax τ. We thus write the utility of type *i*'s individual as:

$$U_i = u\left(w_i(1-\tau) - s_i\right) + \beta u\left(Rs_i + w_i z_i (1-\tau) + p - z^2 / 2\gamma_i\right)$$

where *R* is the interest factor, w_i gross labour income, s_i the amount of saving and z_i the age of retirement. The disutility of working long is quadratic with health parameter γ_i. Furthermore, the pay-as-you-go (PAYG) principle implies the following revenue constraint:

$$p = \tau \sum \pi_i w_i \left(1 + n / z_i\right)$$

The optimal amount of saving s_i^* is given by the FOC:

$$-u'(c_i) + \beta R u'(d_i) \leq 0 \text{ for } s_i^* = 0$$

$$= 0 \text{ for } s_i^* > 0$$

Low productivity individuals are assumed to be credit-constrained and only rely on their current income, including labour income and pension benefits, to finance their consumption during their second period of life. Alternatively, high productivity individuals save part of their first-period labour income. We therefore have: $s_3^* > 0$ and $s_2^* = s_1^* = 0$. Also, if individuals could freely choose their age of retirement, they would decide to work a fraction z_i^* of their second period of life:

$$z_i^* = \gamma_i w_i (1-\tau)$$

When choosing their optimal age of retirement, individuals take their pension benefits as given. They do not internalise that working longer may bring about higher pension benefits for the society as a whole. We start with a social security system consisting of a payroll tax τ and a compulsory age of retirement $\bar{z}$ such that:

$$z_1^* \leq \bar{z} < z_2^* < z_3^*$$

By this assumption, we mean that the first type of individuals, characterised by low productivity and poor health, would like to retire earlier and the two others later.

We want to see the political support for an increase in the age of retirement from $\bar{z}$ to $\tilde{z}$. But before, let us see the first- and second-best solution from a utilitarian viewpoint. Assuming that $R = 1+n$, the first-best problem can be expressed by the following Lagrangean:

$$L_I = \sum \pi_i \{u(c_i) + \beta u(d_i - z_i^2/2\gamma_i) - \mu[c_i(1+n) + d_i - w_i(1+n+z_i)]\}$$

From the first-order conditions, we obtain the standard results:

$$c_i = x_i = \text{constant if } (1+n)\beta = 1$$

$$z_i = \gamma_i w_i$$

Assume now that the government can only use z as an instrument. Its second-best problem is given by the Lagrangean:

$$L_2 = \sum \pi_i \{u(w_i(1-\tau) - s_i) + \beta u(w_i \bar{z}(1-\tau) + R s_i - z_i^2/2\gamma_i + \tau \overline{w}(1+n+\bar{z}))\}$$

with

$$\frac{\partial L_2}{\partial \bar{z}} = \sum \beta \pi_i u'(x_i)[w_i - \bar{z}_i/\gamma_i + \tau(\overline{w} - w_i)] = 0$$

where $\overline{w} = \sum \pi_i w_i$. One clearly see that when $\bar{z}$ is the only instrument, it is chosen considering two effects: (i) it is a compromise among the optimal ages $z_i^* = w_i \gamma_i$; (ii) it benefits those with productivity below the mean.

In this paper we assume that $\bar{z}$ is not optimal or rather that it is not anymore optimal because of, e.g., aging. It would be desirable to increase it from $\bar{z}$ to $\tilde{z}$.

We want to see the political support for such an increase in z; we keep $\bar{\tau}$ constant and assume that the increased revenue so generated is used to finance a new pension level $\tilde{p}$ with:

$$\tilde{p} = \bar{\tau}(1+n+\tilde{z})\overline{w} > \bar{p} = \bar{\tau}(1+n+\bar{z})\overline{w}$$

Alternatively,

$$\Delta \bar{p} = \bar{\tau}\, \overline{w}\, \Delta \bar{z} > 0$$

From a utility viewpoint, both types 2 and 3 gain. Type 1's individuals can lose or gain; we assume that they lose. In other words:

$$\Delta x_1 = w_1(1-\tau)\Delta \bar{z} + \bar{\tau}\, \overline{w}\, \Delta \bar{z} - \frac{(\bar{z} + \Delta \bar{z})\bar{z}^2}{2\gamma} + \frac{\bar{z}^2}{2\gamma} < 0$$

or:

$$\bar{\tau}\,\bar{w} + w_2(1-\bar{\tau}) - \Delta\bar{z}/2\gamma - \bar{z}/\gamma < 0 \qquad (1)$$

Quite clearly for low values of w_L and above all of γ, this inequality holds.

For $\pi_2 + \pi_3 > 1/2$, there is a majority in favour of the policy reform $\Delta\bar{z}$. However if the reform is proposed before low productivity workers know about their health status, namely in the middle of the first period, they will vote for the reform only if their expected utility following the implementation of the reform exceeds their expected utility under a no-policy change scenario, *i.e.* only if:

$$\begin{aligned}&\bar{\pi}_1\, u\left(w_L(1-\tau)\tilde{z} + \tilde{p} - \tilde{z}^2/2\gamma\right) + \bar{\pi}_2\, u\left(w_L(1-\tau)\tilde{z} + \tilde{p} - \tilde{z}^2/2\gamma\right) > \\ &\bar{\pi}_1\, u\left(w_L(1-\tau)\bar{z} + \bar{p} - \bar{z}^2/2\gamma\right) + \bar{\pi}_2\, u\left(w_L(1-\tau)\bar{z} + \bar{p} - \bar{z}^2/2\gamma\right)\end{aligned} \qquad (2)$$

where $\bar{\pi}_1 = \dfrac{\pi_1}{\pi_1 + \pi_2}$ and $\bar{\pi}_2 = 1 - \bar{\pi}_1$. Note that there is a majority for the reform if, from a utilitarian perspective, the expected gain of type 2 individuals exceeds the expected loss of type 1 individuals, allowing for Pareto-improving transfers *ex post*.

With $\pi_1 + \pi_2 > 1/2$, inequality (1) and a strong concavity of u(·), the reform could be rejected even though *ex post* it would be supported by a majority of citizens. Fernandez and Rodrik (1991) show that this outcome is even possible with risk neutrality. The fact that the outcome depends on the concavity of the utility function suggests that observed cross-country differences in resistance to reforms could also be attributed to differences in preferences rather than to socio-economic factors, such as national income or health conditions.

We thus have a reform that would improve the welfare of a majority of workers and yet it is rejected *ex ante* by another majority of workers. To circumvent this typical ratchet effect, the government should guarantee the workers with poor health that they will not be subject to the reform. In other words they will keep the possibility of retiring at age $\bar{z}$.

Here we face the issues of commitment and credibility. Indeed, it is not clear that workers will trust their government's commitment to protect the disabled from the adverse consequences of the reform. As it is well known governments' credibility varies across countries and we can expect that social security reforms will be more successful where governments are credible. The conclusion one can draw from this simple model is that reforms are more likely in countries with more credible public authorities and less uncertainty as to the capacity to work long and healthy.

There exist other explanations of the difficulty of reforming social security and particularly of raising the age of retirement. First of all, there is a pure redistributive factor. If a majority of citizens benefit from the *status quo*, a reform will be difficult. Cremer and Pestieau (2003) have shown that workers don't realize that a true *status quo* is unrealistic and that if they vote against the reform they will not avoid a cut in pension benefits. If they were given the real alternative:

unchanged retirement age and reduced benefits on the one hand and increased retirement age and unchanged benefits on the other hand, they would predominantly vote for the reform.

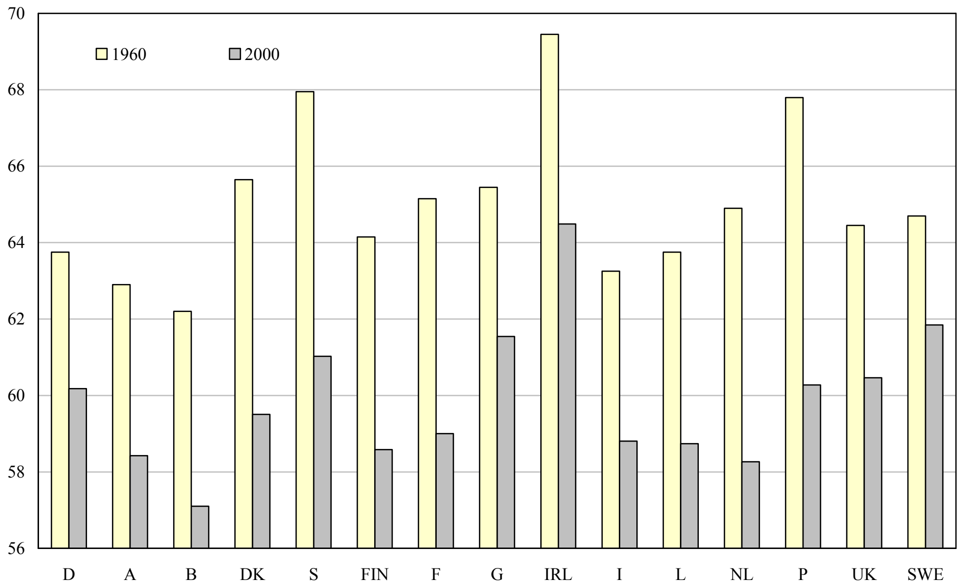
3. The length of retirement

Figures 1-3 presents for the EU15 countries and the years 1960 and 2000 three sets of data: the effective age of retirement such as computed by OECD, the longevity proxied by life expectancy at birth and finally the expected or average length of retirement, obtained as the difference between life expectancy and effective age of retirement. This is a quite rough measure but it indicates an order of magnitude. In Portugal and in 1960, we have a negative length of retirement. We have to keep in mind that the populations on which life expectancy and effective retirement age are computed are very different.

The effective age of retirement is a synthetic measure of the rate of activity of elderly workers which is known to have decreased everywhere over the last four decades, but to a variable extent across countries. As shown by Gruber and Wise (1999) and Blondal and Scarpetta (1998) the main explanation for such a decline is

Figure 1

Effective Age of Retirement, Men and Women together, 1960 and 2000



Source: Blöndal and Scarpetta (1998), Burniaux, Duval and Jaumotte (2004).

the generosity of social security programs that induce elderly workers to exit the labour market much before the statutory age of retirement.

In 1960, the effective retirement age ranged from 69.5 in Ireland to 62.2 in Belgium. Forty years later, this range narrowed down to 64.5 and 57.1 for the same countries.

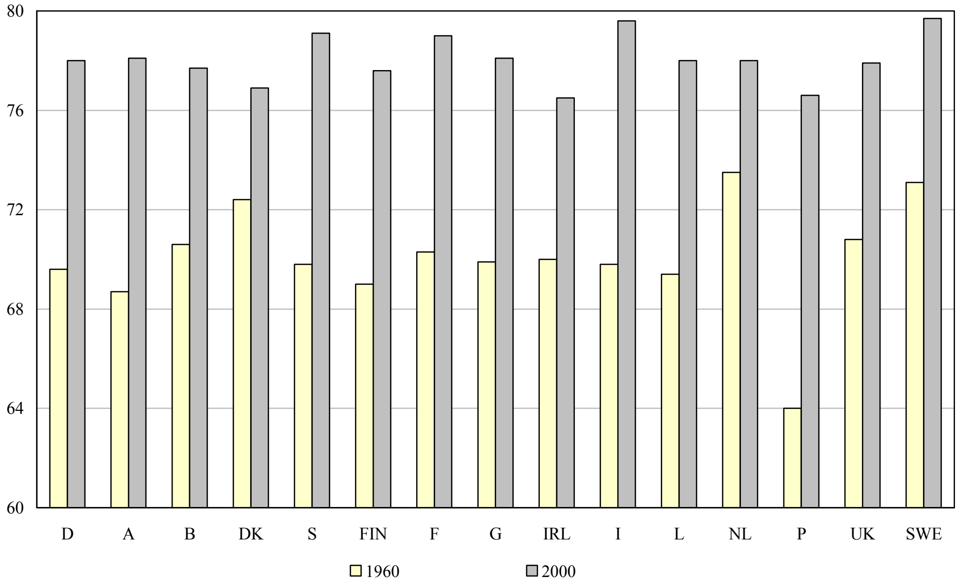
Figure 2 gives life expectancy at birth for both sexes together. In 1960, it ranged from 73.5 in the Netherlands to 64.0 in Portugal. In 2000, it went from 79.6 in Sweden to 76.5 in Ireland. These numbers point to both significant increases in and convergence of life expectancy in Europe (EU15).

Finally, Figure 3 gives the expected length of retirement which in 1960 reached a maximum of 8.6 years in the Netherlands. In 2000, it ranged from 20.8 in Italy to 12.0 in Ireland. Average length of retirement in EU15 went from 5.0 years in 1960 to 18.2 in 2000. This is quite an impressive increase.

This rapid increase in the length of retirement is due to two contrasting evolutions: an increase in longevity that is explained by both medical progress and living habits and a decline in the activity rate of elderly workers that is explained by social security but also by economic growth. Our purpose is not really to explain these evolutions but rather to explain why some countries seem to have behaviour

Figure 2

Life Expectancy at Birth, Men and Women Together, 1960 and 2000



Source: OECD Health Data 2004, 1st edition.

Figure 3

Expected Length of Retirement, Men and Women Together, 1960 and 2000

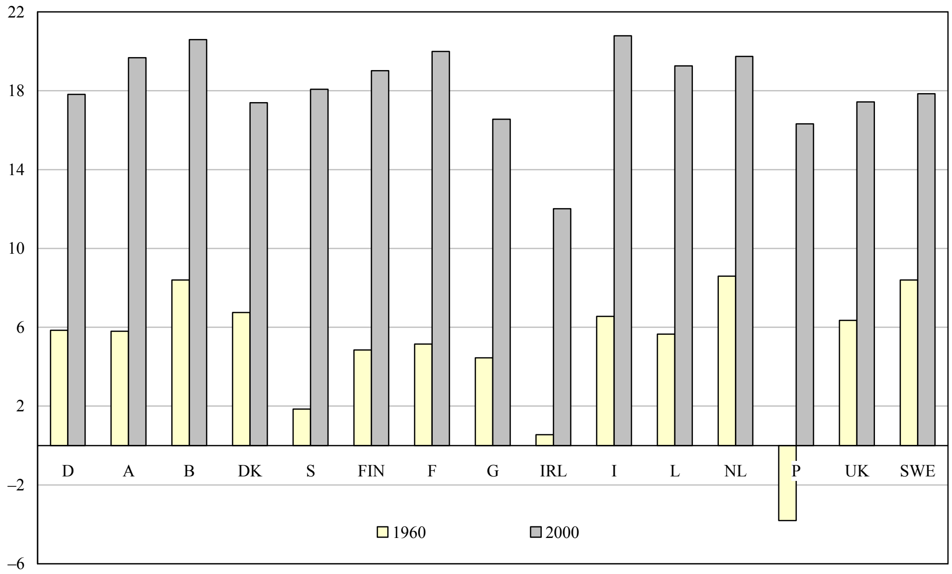


Table 1

Correlation Between Longevity and Effective Age of Retirement – EU15

		Year	Effective Retirement Age		
			Male	**Female**	**Male and Female**
Longevity	**Male**	1960	0.060	–0.194	–0.110
		2000	0.026	0.010	0.018
	Female	1960	–0.249	–0.445	–0.397
		2000	–0.343	–0.197	–0.281
	Male and Female	1960	–0.079	–0.312	–0.243
		2000	–0.180	–0.105	–0.149

towards retirement that is less reactive than others to factors that should lead them to increase their age of retirement.

Table 1 gives us the correlation coefficients between longevity and retirement age. One would expect a positive correlation between those two variables. All things being equal, people should retire later if they live longer. As we can see, we have coefficients that are low, often negative and always non significant. This does not necessarily point to resistance to reforms. For example, the negative correlation coefficients may be due to economic growth.

4. Model of retirement

Microeconomics theory shows that a rational worker would choose an age of retirement that decreases with income and wealth (leisure being a normal good) and that increases with longevity (additional earnings are needed). This rational choice can be distorted by public policy notably in case of unemployment. Unemployment normally leads elderly worker to withdraw from the labour force; if furthermore the government thinks that exiting elderly workers from the labour market may help youth employment, it will create inducements to early retirement. On this basis, we start with a simple relation:

$$r = \varphi(\underset{-}{y}, \underset{+}{\ell}, \underset{+}{1-u})$$

which relates the effective age of retirement, r, to income y (negatively) and to both longevity, ℓ, and one minus the unemployment rate, $(1 - u)$ (positively). We will use this relation to construct a best practice frontier. Each country taken in three periods, 1970-80, 1980-90 and 1990-2000, will be evaluated with respect to this frontier and the slack between its behaviour and the frontier will be considered as measuring its resistance to reforms. It is important to understand that by including the unemployment rate in the function we are not saying that this is a good policy. In fact, we believe that lowering the age of retirement has no effect on unemployment. What matters here is to represent the behaviour of governments. As a consequence, the slack that we are measuring are taken relative to a behaviour that is already inefficient.

What may explain why some countries seem to be better at reforming their pension policies than other is the way their inhabitants perceive the reality of retirement. Thanks to the Euro barometer, we have some information concerning the attitude of Europeans towards their pension system. Six questions are presented in Table 2. They allow for detecting conservative versus reformist views concerning pensions reforms. For example, reformists tend to be in favour of a late age of retirement, to think that times will be tough without changes, to believe that aging is a real problem, to agree that the retirement age should be raised, to disagree with the idea that early retirement fosters youth employment and to be against a fixed (low) age of retirement.

Table 2

Eurobarometer 56.1 (September-October 2001)
(selected questions)

No.	Question
Q.48	Intended age of retirement
Q.55	Percent of people who anticipate after retirement they will be able to enjoy without having to worry about money or they will be able to live reasonably well
Q.66	Percent of people who think that in the future the aging process will pose a major problem
Q.673	Percent of people who agree that the age of retirement should be raised
Q.681	Percent of people who agree that people in their late fifties should give up work to make way for younger and unemployed people
Q.682	Percent of people who agree that older worker should be forced to retire at a fixed age

Instead of looking at the way each country's citizens answer those six questions by computing averages, we have used cluster analysis to see if we can divide Europe into two groups. As Figure 4 shows, we end up with two clusters: cluster A includes Ireland, Denmark, United Kingdom, Finland, Austria, the Netherlands, Germany and Sweden. Cluster B gathers Portugal, Spain, France, Italy, Luxembourg, Belgium and Greece. Cluster A is made of Northern countries with Germanic languages (except Finland). Cluster B is Mediterranean (except Luxembourg and Belgium). This distinction somehow overlaps with that of Esping-Andersen (1995).

We can now turn to the estimation of the relation:

$$r = \varphi(y, \ell, 1-u)$$

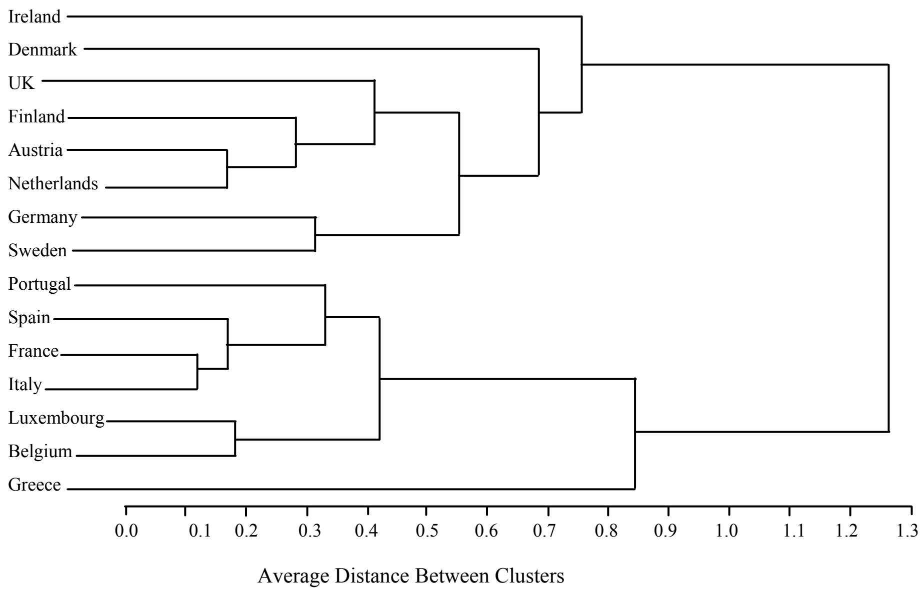
We have modified this simple relation in several ways. The explanatory variables are lagged and we have also used their variations, over the previous period, as regressors. All these variables are expressed in logarithms, as well as the endogenous variable. Moreover, we also included periods and clusters dummy variables as potential explanatory factors of slacks to the frontier.

The corresponding stochastic frontier specification is as following:

$$r_t = [\beta_0 + \beta_1 y_{t-1} + \beta_2 \Delta y_t + \beta_3 \ell_{t-1} + \beta_4 \Delta \ell_t + \beta_5 (1-u)_{t-1} + \beta_6 \Delta (1-u)_t] + [\upsilon_t - \mu_t]$$

Figure 4

Dendogram of Eurobarometer Variables



where $\mu_t = \delta_0 + \delta_1 d_{80-90} + \delta_2 d_{90-100} + \delta_3 d_A$, and β_i (i = 1,...,6) and δ_j (j = 1,2,3) the parameters to be estimated.

The d_{80-90} and d_{90-100} indicate binary variables for the periods 1980-90 and 1990-2000 respectively, and d_A a dummy for cluster A. Moreover, υ_t is a stochastic random term assumed to have the usual *iid* properties and a normal distribution, $N(0,\sigma_v^2)$, and μ_t an *iid* non-negative random variable associated with slacks to the frontier assumed to follow a truncated normal distribution $N(\mu_t, \sigma_\mu^2)$.

Batesse and Coelli (1995) developed the log-likelihood function of this model and the corresponding derivatives.[3] Note that besides β_i and δ_j, two other parameters are estimated, simultaneously: $\sigma^2 = \sigma_\upsilon^2 + \sigma_\mu^2$ and $\gamma = \sigma_\mu^2 / \sigma^2$. Slacks to the frontier are estimated as expectations $E[\exp(-\mu_t|(\upsilon_t - \mu_t))]$.

[3] We use the FRONTIER program developed by Coelli (1996) to estimate the model.

Table 3

Retirement Frontier Model
(periods: 1970-80, 1980-90 and 1990-2000 – 15 countries)

Variable			Coefficient	Standard error	t-test
Dependent variable : effective retirement age (r_t)					
Intercept		β_0	0.837	0.940	0.89
GDP per capita	y_{t-1}	β_1	–0.110	0.013	–8.21
	Δy_t	β_2	0.077	0.052	1.49
Longevity	ℓ_{t-1}	β_3	0.657	0.232	2.83
	$\Delta\ell_t$	β_4	–0.801	0.882	–0.91
Unemployment	$(1-u)_{t-1}$	β_5	0.172	0.131	1.31
	$\Delta(1-u)_t$	β_6	0.099	0.195	0.51
Explanatory factors of inefficiency					
Intercept		δ_0	0.024	0.040	0.59
Period	d_{80-90}	δ_1	0.036	0.039	0.93
	d_{90-00}	δ_2	0.019	0.060	0.31
Cluster	d_A	δ_3	–0.035	0.018	–1.93
Other parameters					
		σ^2	0.001	0.000	2.21
		γ	1.000	0.001	1.20E03

Note: Explanatory factors of inefficiency are dummies variables. The other variables in the model, included the effective age of retirement, are in logarithms.

Data sources: GDP per capita: OECD, 2004b, unemployment: OECD, 2001, longevity: OECD, 2004a.

The results are given in Table 3. The coefficients of y_{t-1}, ℓ_{t-1} and $(1-u)_{t-1}$ have the expected signs and those of y_{t-1} and ℓ_{t-1} are highly significant. However, none of the three variables representing variations over the previous ten-years period, Δy_t, $\Delta\ell_t$ and $\Delta(1-u)_t$, is associated with significant coefficients. Summing up, these results indicate that, at the country level, the average age of retirement is correlated with income and longevity but not with labour market performances, nor with short term variations of these variables.

Table 4a

Effective and Optimal Age of Retirement by Cluster and Country

Cluster Country	Period	Effective age of retirement	Technical efficiency	Optimal age of retirement	Difference
A	1970-1980	62.0	0.974	63.7	1.7
	1980-1990	60.4	0.965	62.6	2.2
	1990-2000	60.2	0.971	62.0	1.8
B	1970-1980	61.7	0.967	63.8	2.1
	1980-1990	59.4	0.948	62.7	3.3
	1990-2000	59.5	0.954	62.4	2.9
Cluster A					
Austria	1970-1980	59.7	0.949	62.9	3.2
	1980-1990	57.7	0.946	61.0	3.3
	1990-2000	58.4	0.956	61.1	2.7
Denmark	1970-1980	62.8	0.998	62.9	0.1
	1980-1990	61.6	0.992	62.1	0.5
	1990-2000	59.5	0.979	60.8	1.3
Finland	1970-1980	59.9	0.942	63.6	3.7
	1980-1990	59.5	0.945	63.0	3.5
	1990-2000	58.6	0.972	60.3	1.7
Germany	1970-1980	61.5	0.981	62.7	1.2
	1980-1990	59.3	0.959	61.8	2.5
	1990-2000	60.2	0.994	60.6	0.4
Ireland	1970-1980	66.1	0.990	66.8	0.7
	1980-1990	62.9	0.971	64.8	1.9
	1990-2000	64.5	0.982	65.7	1.2
Netherlands	1970-1980	59.9	0.946	63.3	3.4
	1980-1990	57.6	0.916	62.9	5.3
	1990-2000	58.3	0.917	63.6	5.3
Sweden	1970-1980	63.3	0.988	64.1	0.8
	1980-1990	63.2	0.999	63.2	0.0
	1990-2000	61.8	0.995	62.1	0.3
United Kingdom	1970-1980	63.3	0.994	63.7	0.4
	1980-1990	61.9	0.991	62.5	0.6
	1990-2000	60.5	0.974	62.1	1.6

Table 4b

Effective and Optimal Age of Retirement by Cluster and Country

Cluster Country	Period	Effective age of retirement	Technical efficiency	Optimal age of retirement	Difference
B	1970-1980	61.7	0.967	63.8	2.1
	1980-1990	59.4	0.948	62.7	3.3
	1990-2000	59.5	0.954	62.4	2.9
Cluster B					
Belgium	1970-1980	59.3	0.943	62.9	3.6
	1980-1990	56.5	0.930	60.7	4.2
	1990-2000	57.1	0.931	61.3	4.2
France	1970-1980	61.1	0.964	63.4	2.3
	1980-1990	59.3	0.964	61.5	2.2
	1990-2000	59.0	0.962	61.3	2.3
Greece	1970-1980	63.7	0.958	66.5	2.8
	1980-1990	61.5	0.975	63.1	1.6
	1990-2000	61.5	0.937	65.7	4.2
Italy	1970-1980	60.6	0.947	64.0	3.4
	1980-1990	59.2	0.964	61.4	2.2
	1990-2000	58.8	0.966	60.9	2.1
Luxemburg	1970-1980	59.9	0.982	61.0	1.1
	1980-1990	56.8	0.917	61.9	5.1
	1990-2000	58.7	0.972	60.4	1.7
Portugal	1970-1980	63.8	0.988	64.6	0.8
	1980-1990	62.5	0.957	65.3	2.8
	1990-2000	60.3	0.941	64.1	3.8
Spain	1970-1980	63.5	0.985	64.4	0.9
	1980-1990	60.7	0.929	65.3	4.6
	1990-2000	61.0	0.969	62.9	1.9

In the second panel of Table 3 we find the explanatory factors of inefficiency (the gap between the best practice frontier and actual behaviour). As expected, countries belonging to Cluster A are closer to the best practice frontier. Higher inefficiencies are observed over time, particularly for the period 1980-1990, but the estimated coefficients are not significant at all.[4] Very little change is observed over the period 1970-2000, reflecting significant inertia of attitudes towards pensions.

Table 4 gives a detailed account of the efficiency slacks for the 15 countries and the 3 periods considered. We have the observed age of retirement and the "optimal" age of retirement, namely the one given by the best practice frontier. The difference between the two is what is called the technical inefficiency or the performance slack. It measures the resistance to reforms. On average this resistance is higher in Cluster B than in Cluster A. The slacks don't decrease over time.

5. Conclusions

There is an increasing consensus on the need for pension reforms among policy makers. However, the public at large is more reluctant to support reforms, having a clear bias for status quo. This paper presented a simple model in which a welfare improving reform can be voted down *ex ante*. This notably depends on how individuals evaluate pension reform *ex ante*, *i.e.* on their attitudes as reflected by their utility function in this stylised model. Empirically, it seems that preferences, as captured by a dummy grouping countries with similar attitudes, play a role in the "efficiency" of pension systems, as measured by their distance to a best practice frontier. This suggests that more information on reform options and on the challenges posed by population ageing may be key to alter people's attitudes towards reforms. One should also bear in mind that reforms will affect different categories of the population in different manners and that some would be made worse off compared to the status quo option. The key challenge here is that the status quo option may simply not be feasible and that therefore thereis an urgent need to reach consensus on pension reforms.

4 As observed at the bottom of Table 3, the parameter is equal to one, which indicates that the estimated model is deterministic. In other words, the composed error term, $v_t - \mu_t$, is fully attributed to efficiency slacks.

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