

# LA LETTRE DU

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## FINANCING PENSION: DON'T COUNT ON ANYONE ELSE

*Over the next few years, European countries will experience an unprecedented phenomenon as the numerous populations born in the post-war years reach retirement age. This ageing and the reforms of pension schemes necessary to accommodate it will modify national activity, saving and investment behaviours. However, the interdependence of financial markets means that the demographic and economic mutations observed in each country will not be without repercussions on the other members of the EU. This has been illustrated by a simulation centred on Germany, France and the United Kingdom and carried out in two contrasting financial environments. This simulation shows that the reforms implemented are insufficient: the financial imbalances cannot be supported in the long term, whatever the degree of financial openness. Therefore, new reforms seem necessary. The option of a reduction in the amount of pensions and that of a rise in contribution rates are explored<sup>1</sup>.*

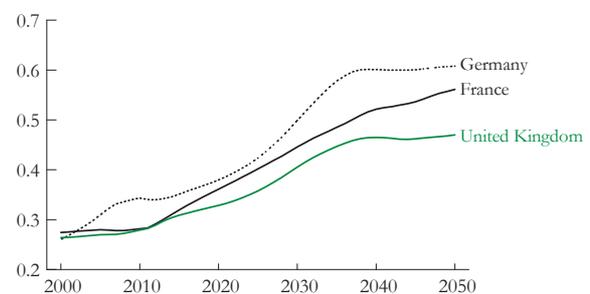
### ■ The paths followed

Due to their individual characteristics, particularly those that affect demographic ageing, Germany, France and the United Kingdom will experience different growth dynamics. In all cases, the ratio between the number of pensioners and the working population (dependency ratio) will become less favourable in the next fifty years (graph 1). Nevertheless, the situation seems more worrisome in Germany than in the United Kingdom and to a lesser extent in France. The ageing calendar will also be different: many people in the baby-boom generation take retirement from 2005 on in Germany whereas the phenomenon is more spread out in the other two countries. In addition, the drop in the proportion of the population of working age (20-64 years) will be large in Germany, but low in France, where the birth rate is higher, and the United Kingdom, where immigration is higher.

The economic effects of ageing are conditioned by the countries' socio-economic conditions, first among which are the characteristics of the pensions system, the impact on the changes in the active population and the reforms undertaken to guarantee their viability. France and Germany have

comparable social protection systems, both in their degree of generosity (public pension currently represent more than 12% of the GDP) and the way they work (mainly contributory). The United Kingdom is different, with a pension scheme that is inexpensive for public finances (around 5% of the GDP), characterised by low and quite extensively fixed-rate state pensions, a higher average retirement age<sup>2</sup> and a large place given to pension funds (boxed text 1).

Graph 1 - Dependency ratios of older people (65+/20-64 years)



Source: C. Bac & J. Chateau (2003), "Actualisation des projections démographiques du CEPII pour sept pays de l'Union européenne", mimeo CEPII.

1. This newsletter is inspired by certain results presented in J. Chateau & X. Chojnicki (2006), "Disparities in pension financing in Europe: Economic and financial consequences", CEPII, Working document no. 2006-09. This work was supported financially by the Observatoire de l'Épargne Européenne.

2. According to the OECD, this age was 63 for men and 61 for women in the United Kingdom in 2002, as against 61 and 60 respectively in Germany and 59 and a half for French men and women.

Germany has the oldest social protection system, introduced by Chancellor Bismarck in 1899. To benefit from it, people have to contribute to a social insurance scheme based on the exercise of a professional activity. The normal age for taking retirement is 65. The pensions received are mainly proportional to the contributions made during working life. Therefore, the system assumes very little redistribution between professional categories. It is one of the most generous systems in the world, ensuring a 70% replacement of average wages.

France also has a Bismarck inspired pension system that was heavily developed just after the Second World War. It is characterised by a wide diversity of schemes. For private sector employees (68% of employees), pension benefits are provided by a basic annuity scheme and by

complementary obligatory schemes. The minimum age for retiring is set at 60 in the general scheme. In spite of the diversity of schemes, the retirement replacement rates are very close for the different categories of employees, around 65%.

The United Kingdom has a mixed three level pension system. The basic state pension is flat rate and proportional to the length of contribution time; it is at a very low level (about 15% of average wages). It is completed either by occupational pensions (pension funds), or by a not very generous public distribution scheme, according to the free choice of employees. The third level is made up of private pension plans. The legal retirement age is 65 for men and 60 for women (with gradual alignment by 2020).

The three countries are also following different paths in reforming their pension systems. Germany has decided to encourage its citizens to opt for complementary schemes based on capitalisation (2001 Riester reform) so as to limit the increase in the cost of labour coming from increases in social contributions. France prefers to count on a decrease in the buying power of pensions, combined with an almost automatic mechanism for adjusting the contribution period to the expected gains in life expectancy (2003 Fillon reform). In the United Kingdom, where the financial problems of the public pensions system do not have the same acuteness, the labour government has set improving the living standard of the poorest pensioners as its main objective. However, in the three countries the distribution schemes have been adapted to encourage workers to extend the length of their professional careers, in conformity with the undertakings made at the Lisbon (March 2000) and Barcelona (March 2002) summits.

## ■ Unsupportable financial situations

Europe is not a totally homogeneous demographic area. So, the existence of pension systems specific to each country coupled with demographic ageing of different extents and according to different timetables may have an impact on the flows of savings and the formation of fixed capital. However, the nature of the financial environment plays a crucial role concerning the way in which any needs for external finance are satisfied and in fine on the level of investment. To illustrate this, we evaluate the consequences of ageing using a model developed at the CEPII (boxed text 2) subject to two diametrically opposed assumptions of financial openness. In the first case (classic example known as “small open economy”), each of the three countries is totally open, from a financial point of view, to the exterior. The sum of its financial needs is negligible on the international financial markets: any national savings deficit in relation to investment is automatically made up by foreign savings (inflows of

capital) without the interest rate varying. This is, implicitly, the framework chosen in the official financial projections of the pension schemes (Charpin, report 1999<sup>3</sup>). In the second case, the three economies are integrated into a financial area within which the mobility of capital is perfect but which, on the other hand, is totally closed to the exterior so that the interest rate is endogenous to the area.

We have simulated the same “business as usual” scenario, in which the rules of the pension systems are modified over time according to the already adopted timetable of reforms, up until 2040 for each of the two financial environments.

In the first case, these reforms, combined with the assumed increase in the rate of activity of senior citizens, will ensure the solvency of pension schemes until 2010 in France, whereas Germany and the United Kingdom face imbalances immediately (table 1). After 2010, the accumulation of deficits leads to an increase in the indebtedness of pension schemes, particularly critical in the long term in the cases of Germany and France. The United Kingdom’s situation is less serious, by 2030-2040, due to the less generous state pension scheme and higher average retirement age.

Table 1 – Scénario “au fil de l’eau” - Small open economy

	2005	2010	2020	2030	2040
	France				
Rate of growth of GDP (in %)	2.5	2.2	1.5	1.3	1.4
State pension costs (in % of GDP)	12.3	12.5	13.7	15.7	17.1
Debt of the pension schemes (in % of GDP)	-0	0	8	41	104
Rate of capital ownership	1	0.97	0.96	0.95	0.86
	Germany				
Rate of growth of GDP (in %)	2.5	2	1.2	0.7	1.5
State pension costs (in % of GDP)	12.9	12.5	13.9	16.2	17.5
Debt of the pension schemes (in % of GDP)	3	6	21	54	113
Rate of capital ownership	1	0.91	0.87	0.85	0.75
	United Kingdom				
Rate of growth of GDP (in %)	2.1	2.5	1.7	1.3	1.7
State pension costs (in % of GDP)	5.2	5	4.8	5.1	5
Debt of the pension schemes (in % of GDP)	2	4	8	16	31
Rate of capital ownership	0.95	0.92	0.87	0.87	0.79

Source: Authors’ calculations.

These financial needs are translated by large capital inflows from 2020 onwards. The net financial position of each country towards the rest of the world, expressed by the ownership rate (ratio of the national wealth to the national

3. “L’avenir de nos retraites : Rapport au Premier ministre”, J. M. Charpin, Commissariat général du Plan, La Documentation française, 1999.

To study the economic and financial effects of demographic ageing, the CEPII has developed a general equilibrium model with overlapping generations of heterogeneous agents. This model is situated at a degree of demo-economic integration intermediate between the pure micro-based general equilibrium models and the accounting models, where the macro-economic environment remains exogenous. It is a neoclassical growth model like that of Blanchet (1992)\* enriched with saving behaviour and labour market specifications comparable to those proposed by Autume and Quinet (2001)\*\*. At each date, the value added is a combination of labour and fixed capital existing within the economy, with these two factors being partially substitutable.

The agents are distinguished by their age, gender and professional status (executive, non executive and civil servant), in order to reproduce as closely as possible the different pension schemes that exist in each country. The participation of individuals in the labour market is not

determined in the model. The hypotheses retained for the future changes in individuals' rates of activity are optimistic, following the example of those used by the official projections.

By 2040, they lead to an increase in the average age for stopping work of 3 years in France and the United Kingdom and 5 years in Germany, as well as a significant increase in the activity rates of older people.

The financial equilibrium (in case of negative primary balances) of the distribution schemes can be ensured either by recourse to borrowing or by adjustment to the scheme's instruments.

\* "Retraites et croissance à long terme : un essai de simulation", D. Blanchet, *Économie et Prévision*, 105, 1992.

\*\* "Une maquette de moyen terme de l'économie française", A. d'Autume & A. Quinet, *Économie et Prévision*, 148, 2001.

productive capital, normalised to 1 in 2000), is significantly deteriorating (table 1). The combination of a decrease in the average savings rate of households, that is the mechanical consequence of ageing, and the large financial needs of the pension schemes leads to a situation of very clear indebtedness towards outside.

The economic consequences of ageing are even more marked in the case of a European financial area closed to the rest of the world (table 2). Indeed, the interest rate is in this case determined on a "European" capital market. The increase in financial needs then results, over time, in an increase in the area's interest rate (from 4% in 2005 to 5.5% in 2040) which damages growth. Thus, the share of pension in the GDP increases, not because of an increase in the purchasing power of pensions, but because the GDP reaches lower levels. The consequences of ageing are then shared between the three countries through a common interest rate. Germany, which is the country the most affected by ageing, captures most of the area's capital flows, to the detriment of France and the United Kingdom. Indeed, as the area is closed to the rest of the world, the large financial needs of the German pension scheme automatically damage the conditions under which the two other countries can access to external finance.

On the contrary, this scenario shows how the EU's increasing openness to external financial markets can substantially lighten the cost of financing state pensions. In terms of pure economic logic, this opening can result in capital movements that are mutually beneficial for all of the world's countries<sup>4</sup>. However, under this assumption, the size of the needs for external finance linked to ageing would damage the financial positions of the European countries to a very large extent. Also, for obvious reasons, such a situation could prove to be politically difficult and, because of that, restart the debate about the adjustment of the rules of pay-as-you-go (PAYG) pension schemes.

Thus, whatever the degree of financial openness, without a new reform of pension systems, the massive increase in pensioners will result in financial imbalances that cannot be sustained in the long term, particularly in France and Germany. The results of the "business as usual" scenario, which do not correspond to the line followed by the different governments concerning public indebtedness, then demonstrate the necessity of new reforms in the rules of the PAYG pension schemes.

## Faced with the political choices

The first way of ensuring the financial balance of state pension schemes is to reduce the sum of pensions paid whilst maintaining the contribution rates at the levels set by the recent reforms. A second way is to do the opposite, by raising the contribution rates whilst maintaining the current rules for calculating pensions. Obviously, it is possible to mix and match these reforms, but it is more interesting to contrast the two options which respectively make the pensioners or the working population bear all of the costs related to ageing.

Without new reforms<sup>5</sup> ("business as usual" scenario), the living standard of pensioners relative to that of the working

Table 2 – "As and when" scenario - Financial area

	2005	2010	2020	2030	2040
	France				
Rate of growth of GDP (in %)	2	1.5	1.3	0.7	-0.3
State pension costs (in % of GDP)	12.8	13.3	14.6	16.7	19.7
Debt of the pension schemes (in % of GDP)	-0	0	10	50	147
Rate of capital ownership	1.04	1.04	1.09	1.1	1.1
	Germany				
Rate of growth of GDP (in %)	2.5	1.5	1	0.3	-0.5
State pension costs (in % of GDP)	12.9	13	14.7	17.3	20.1
Debt of the pension schemes (in % of GDP)	3	9	33	85	202
Rate of capital ownership	1.02	1	0.99	0.95	0.87
	United Kingdom				
Rate of growth of GDP (in %)	1.9	1.8	1.5	0.8	0.1
State pension costs (in % of GDP)	5	5.1	5.1	5.6	6
Debt of the pension schemes (in % of GDP)	2	4	10	21	46
Rate of capital ownership	0.97	1.02	1.01	1.04	1.13

Source: Authors' calculations.

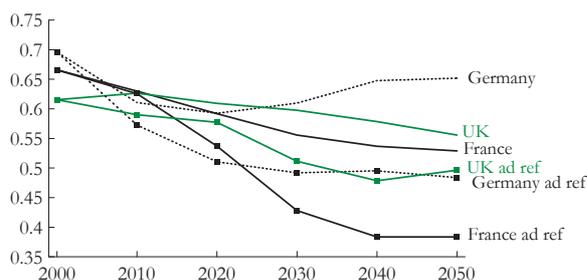
4. INGENUE (2006), "The larger Europe: technological convergence and labour migration", *Revue Économique*, July, to be published.

5. All of the simulations presented below were performed in the most optimistic financial environment, that of a small open economy.

population (measured by the replacement ratio) tends to decline steeply in France (-14 points between 2000 and 2050) and moderately in the United Kingdom (-6 points)<sup>6</sup>, due to the indexing of pensions on prices (graph 2). The relative standard of living of German pensioners will clearly decrease until 2020, due to the 2001 Riester reform, then increase again, due to an indexing of pensions on the average net wage. As we saw earlier, in spite of this loss of purchasing power of the pensions paid in the three countries, the balance of state pension schemes will not be ensured.

To reach this balance, the first adjustment scenario leads to a very large decline in the relative purchasing power of pensions in relation to wages (graph 2). French pensioners are in the most unfavourable situation because, contrary to what is planned in Germany, no significant increase in contribution rates is included in the 2003 Fillon reform (France line in graph 3). To compensate in the long term for this programmed massive decrease in the buying power of future pensioners, households will have to increase their saving rates.

Graph 2 – Changes in replacement ratios with and without additional reforms

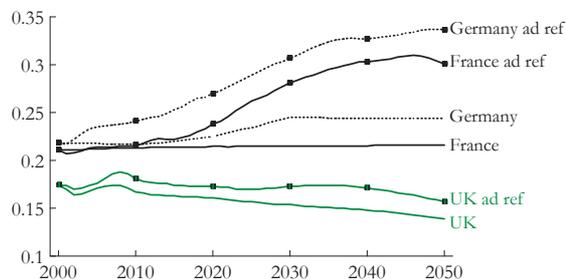


Source: Author's calculations.

With the second type of adjustment, the current rules for calculating pensions are not modified : the contribution rates are adjusted to balance the different superannuation funds (graph 3). They then increase strongly in Germany and France. In the United Kingdom, a simple stabilisation of

contribution rates will be sufficient to ensure the long term balance. The main effect of this pension system balancing rule is to reduce the incomes of the working population and therefore their financing capacities.

Graph 3 – Changes in contributions with and without additional reforms



Source: Authors' calculations.

The simulations performed illustrate the pitfalls of the different methods of managing the financial balance of pension schemes. The recourse to public borrowing cannot constitute a viable long term solution, unless it is assumed in an illusory way that it can be entirely financed by external capital, with no problems. A programmed decrease in pensions will guarantee an equilibrium with undeniable macro-economic virtues, but it entails large income imbalances between the generations. An increase in contributions avoids this problems but at the price of slightly reduced growth. In the face of these political choices, the different governments seem to be steering towards an intermediate path of reform, consisting of sharing the costs of ageing between the working population and pensioners by a progressive increase in the retirement age.

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6. The replacement ratios and contribution rates for the United Kingdom include the pension funds of the second pillar for the individuals who have chosen to leave the public system.

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