

AGEING, WELFARE AND GROWTH: IS THE ITALIAN WELFARE SYSTEM FAR BEHIND THE EUROPEAN TRENDS?

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Ageing, welfare and growth: is the Italian welfare system far behind the European trends?*

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Abstract

The ageing of the population will influence the sustainability of the welfare regimes, as well as the growth trends, in all European countries. In order to compare the effect of the interactions between demographic developments, labour market and economic variables, within the context of different welfare approaches, we developed a projection model which covers a period of 25 years, from 2000 to 2025, for six countries (Denmark, France, Germany, Italy, Netherlands and United Kingdom). The projections are based on ECHP-database and focus on different components of household income, given by gender and age class. In particular labour income, old-age and surviving dependants' pensions, unemployment benefits, invalidity benefits and social assistance are considered. GDP growth is also projected, as well as the impact on GDP and on the equilibrium tax rate of different kinds of social security expenditure.

The model has been built and calibrated to produce projections consistent with two scenarios: a current scenario and a high labour participation scenario. The first scenario has the purpose of taking into account pension reforms already enacted by the governments and considers economic prognosis in line with existing trends in labour market participation. The second is a variant where the participation rates are determined by the Lisbon and Stockholm targets for 2010, which for some countries, like Italy, are actually rather ambitious.

* This paper is based on a recent study conducted by the authors in collaboration with the Social and Cultural Planning Office of the Netherlands (SCP) and the Centre for Research on Pensions and Welfare Policies (CeRP) in Turin.

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1. Introduction

Due to the ageing of the population, the number of elderly is growing in respect to the number of younger almost in all societies. This will influence the sustainability of the welfare regimes, as well as the growth trends. Research in this field, for instance by the EU's Economic Policy Committee and the OECD, has mainly focused on assessing the weight of the financial burden in the coming decades. This of course is a highly relevant issue. However, in order to highlight the interactions between demographic developments, welfare systems and labour market and economic variables, we developed a "demographic-economic projection model". The model is based on a recent study conducted by the Social and Cultural Planning Office of the Netherlands (SCP) and the Centre for Research on Pensions and Welfare Policies (CeRP) in Turin.

The emphasis of the analysis is placed on demography: the Eurostat demographic and household projections serve as input for the model, which covers a period of 25 years, from 2000 to 2025 (divided into 5 five-year classes). For each period, the projections are given by gender and age class and focus on different components of household income: labour income and social transfers (old-age and survivors' pensions, unemployment benefits, invalidity benefits, and social assistance). The necessary data were prepared from the ECHP-database. GDP growth is also projected, as well as the impact on GDP and on the equilibrium tax rate of the different kinds of social security expenditure.

The model allows a comparison of the Italian welfare system with other five countries (Denmark, France, Germany, The Netherlands and United Kingdom) adopting different welfare approaches.

Projections are developed with two main purposes: the first is to develop a comparison between the Italian pension reform and the ones already enacted by the other considered countries, in line with existing trends in labour market participation. The negative impact of ageing, however, can be partially offset if a higher number of working age people reaches a stable employment. The second purpose of the research is indeed to analyse the effects of higher employment rates on the sustainability and adequacy of welfare systems. Under this perspective, the Lisbon and Stockholm targets for 2010 constitute a natural benchmark for the considered countries, and a rather ambitious goal for the Italian system.

The analysis indicates that the long-term financial consequences of pension reforms are fairly positive, in the sense that financial sustainability is improved compared with a 'no policy' scenario. However, these measures may have high social costs, in particular, the

income gap of pensioners can be expected to rise as a result of such a policy approach. Policy measures aimed at increasing labour market participation generally lead to greater financial sustainability and to lower income inequality; the effect on sustainability of this line of policy, however, is weakened by the fact that a higher labour force participation will ultimately lead to a growing group of future pensioners.

This study presents a first and exploratory analysis of the effects of ageing process in different institutional settings. Further research is expected to extend the time horizon beyond 2025, to study the effects of the peak of the ageing process.

This presentation is organised as follows. Section 2 briefly describes different theoretical models of welfare states in Europe; Section 3 describes the structure of the projection model and its three components: a macro module, a benefits module and an income module. Sections 4 and 5 are devoted to specific methodological issues of the model. The effects of demographic trends are presented in sections 6 and 7, respectively for the current scenario and for the Lisbon scenario; Section 8 concludes.

2. The Italian model of welfare state in Europe

In the European Union, each country differs in its social security arrangements. In some countries old age pensions are only provided to former employees, whereas other countries give all citizens an old age pension. In addition, the level of benefits can vary quite considerably. Some countries give disabled people about seventy percent of their former salary, whereas other countries only provide an allowance at a minimum level.

A large social security system, high expenditure on labour market programmes, generous parental leave arrangements and universalistic entry conditions, characterize the Nordic countries, like Denmark, Finland and Sweden. At the other extreme we see Greece, Spain, Portugal and Italy, where fewer dimensions of the individual life are protected, but collective pension schemes are well-developed. The United Kingdom and Ireland are slightly less residual in terms of their social security provisions, but lack extensive state pensions. A midway position is occupied by Germany, France, Austria, Belgium and Luxemburg. Social security schemes are well-developed, but not as universalistic as in the Nordic countries. There is a strong relationship between previous occupations and entitlement to provisions, and income protection for families with children is rather generous. Employees are well protected against dismissal. The number of special schemes for occupational groups is high, and there is extensive collective coverage for civil servants. Pension benefits are slightly above the European average. Two countries, the Netherlands and Norway, do not fall clearly into any group. They are scaled at some distance from the Nordic countries, and may be considered *hybrids*.

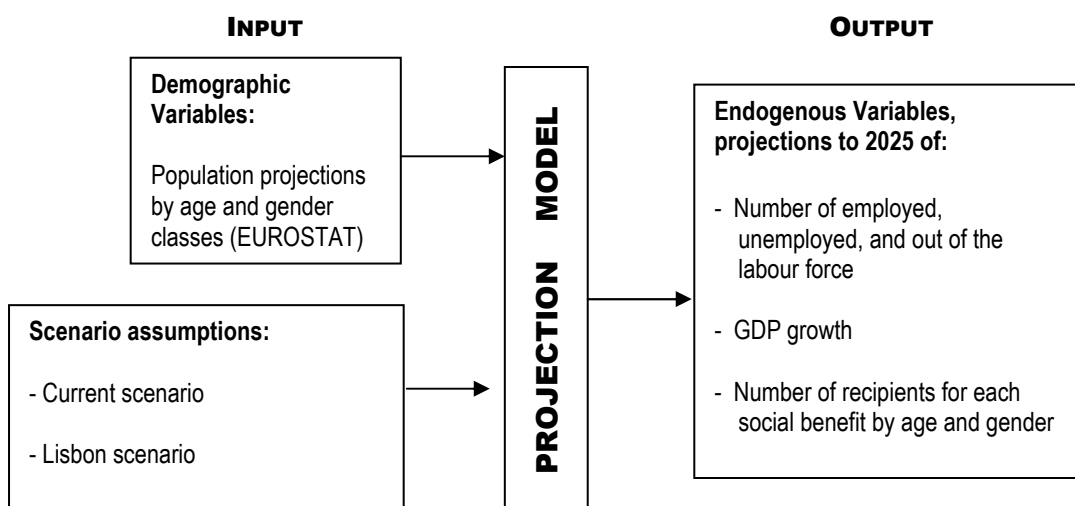
3. The projection method

Demographic developments highly affect economic variables. In order to highlight the interaction between future demographic developments, a model was built which produces consistent estimates of a number of economic key variables up to 2025. In particular, it derives projections of different components of household income and social transfers, such as old-age and survivors' pensions, invalidity benefits, unemployment benefits and social assistance benefits. For each income or benefit category, the model calculates the number of earners or recipients and the average amount in Euros (at 2000 constant prices), in a way consistent with the projected trend in the age profile of the population. In addition, macroeconomic variables, such as GDP growth, social security expenditure and an equilibrium tax rate are computed.

The projection model describes the consequences of the pension reform already implemented by a selection of six European countries, representative of about 74% of the EU-15 population and of different models of welfare state: Denmark (Social-democratic model), France and Germany (Corporatist model), Italy (Mediterranean model), United Kingdom (Liberal model) and the Netherlands (hybrid).

A second scenario, in addition to the implementation of current reforms, considers also the effects of the Lisbon and Stockholm targets for the employment rates. Figure 1 illustrates the general outline of the model.

Figure 1 – General outline of the model



The model adopts a partial equilibrium approach, with 'a step by step' analysis of the following, more specific aspects:

- effects of demographic dynamics on the structure of the labour supply;

- effects of changes in the structure of the labour supply on economic growth;
- consequences for the sustainability and adequacy of the welfare state of changes in the age profile of the population, in the labour supply and in the economic growth rate.

A period of 25 years, from 2000 to 2025, divided into 5 five-year classes, is covered by the projections. The initial data are the Eurostat demographic and household projections given by gender and age class, following Alders (1998).

In addition to the demographic projections, income information is drawn from the European Community Household Panel (ECHP)¹, a database containing detailed information on the incomes of a sample at household member level². A major advantage of the ECHP is the harmonised income definition. Net incomes are available and mutually comparable for all countries.

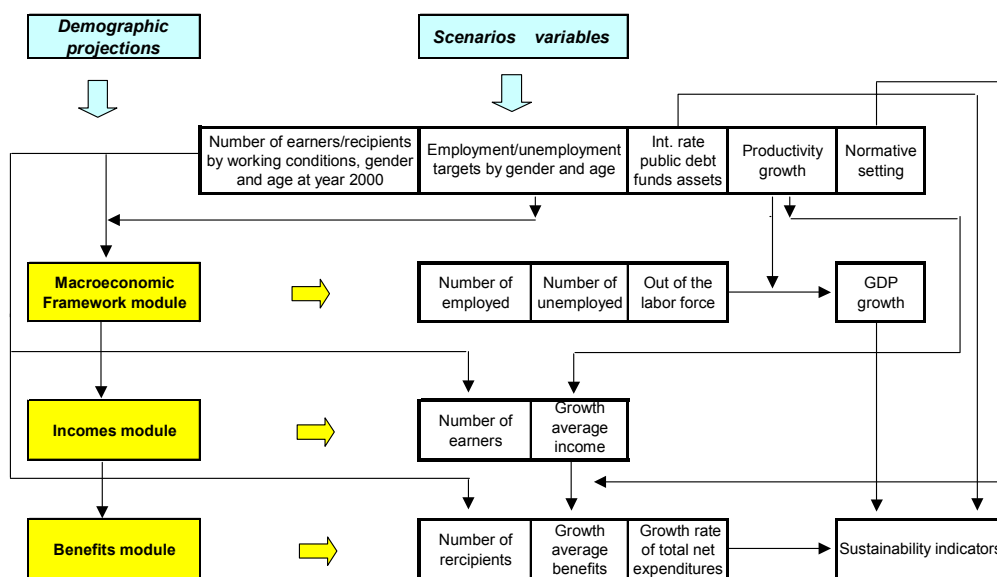
For the purpose of the analysis, the population is divided into three age classes: the ‘younger’ (aged between 15 and 54), the ‘middle-aged’ (between 55 and 64) and the ‘elderly’ (over 65).

The model is composed of three modules: the Macroeconomic Framework module, the Incomes module, the Benefits module. Figure 2 shows the model structure in detail, highlighting exogenous data (demographic projections and values at 2000 of the projected variables), the main scenario assumptions and the endogenous results, as well as the relationships between the three modules, that are discussed in more detail below.

¹ The ECHP dataset refers to 1998 and figures are adjusted to 2000 by re-weighting the population to the demographic structure and employment status in 2000.

² The ECHP dataset focuses only on incomes in cash; it provides no information on benefits in kind (e.g. health services, housing facilities).

Figure 2 – The structure of the projection model



3.1. The Macroeconomic Framework

The Macroeconomic Framework is a module aimed at projecting GDP growth and the development of employment. The main hypothesis adopted concerns labour market development. Labour market participation rates, by gender and age class, are exogenously assumed according to ILO (1997) and EPC (2001), while they are endogenously determined in the case of the simulation of the effects of the Lisbon and Stockholm targets for employment rates. The level of total unemployment (i.e. for all age and gender classes except the elderly) is set equal to the structural unemployment rate defined for each country according to OECD (2000)³, and kept constant over the whole projection period. For France and Italy the structural level is assumed to be gradually met at 2010, and an extra gradual decline of 2% is assumed in the period 2010-2025, because of labour market reforms already undertaken, according to the assumption of EPC (2001)⁴.

Employment rates, therefore, result from participation and unemployment rates, according to standard definitions⁵.

At the beginning of the period considered in the projections, labour market participation rates in the six European countries were as follows.

³ OECD structural unemployment values are: 6.3, 9.5, 6.9, 10.4, 4.7, 7.0, respectively for Denmark, France, Germany, Italy, the Netherlands and United Kingdom.

⁴ The Lisbon scenario adopts a different assumption, as explained in Section 7.

⁵ Note that in the Lisbon scenario, on the contrary, labour market participation rates are endogenously determined as a function of the assumed employment and unemployment rates (see Section 7 for a detailed explanation).

Table 1 – Labour market participation rates by gender and age group in 2000 (percentage values)

Countries	Male participation rates			Female participation rates		
	Younger	Middle-aged	Elderly	Younger	Middle-aged	Elderly
Italy	80,7	42,4	4,9	52,6	16,1	0,9
Denmark	88,4	65,9	7,3	80,2	56,3	1,3
France	80,2	41,7	1,1	67,0	33,1	0,4
Germany	88,7	55,2	3,7	71,8	34,1	1,5
Netherlands	89,3	51,4	4,4	72,4	26,3	1,1
United Kingdom	88,7	63,3	7,1	74,1	42,6	3,4

Source: ECHP figures, corrected to match OECD labour force statistics, 2002.

Table 1 illustrates the variability, among countries as well as among gender and age classes, in the labour market participation rates of the examined European member state. Italy and France suffer the lowest male and female participation rates of younger and middle-aged population, and in Italy female participation rates are the lowest.

In order to measure the effects on economic growth of different institutional frameworks and of different demographic dynamics, on a *ceteris paribus* basis for productivity, the growth rate of labour productivity is assumed to be constant at 1.75% level for all countries⁶. This hypothesis has on one side the advantage to provide an easier comparison across the two scenarios and across countries; on the other, the drawback is that productivity may be a function of age and, in this case, the ageing process of the European economies might have consequences for productivity that are not explicitly taken into account in the model. The literature on this issue, however, does not provide an unambiguous perception on the sign of this impact and, in any case, positive or negative, its dimension is likely to be low in absolute terms⁷.

Given the assumption for labour productivity, the module allows the annual average growth in GDP to be calculated, as the sum of the annual average growth in employment and the annual average growth in productivity⁸.

3.2. *The Incomes*

The model considers the projection of the number of wage earners and the number of self-employed income and private income earners. Moreover, the average levels, within each gender and age class, of labour and capital income⁹ are analysed.

⁶ The level is the one to which the Working Group on Ageing agreed that European Countries should converge by 2030 (EPC, 2001). This level is kept constant for the whole projection period.

⁷ See Blanchet (2001), Auer and Fortuny (2000), OECD (1998), Griffiths (1997), Warr (1994), Shephard et al. (1988).

⁸ This definition of GDP growth does not imply that other factors, in particular capital, are assumed to be irrelevant. The productivity of capital has not been explicitly analysed simply because the estimation of the evolution of the capital stock in the economy is not the aim of this study. However, since it is assumed that the average amount of each income component increases at the same rate of labour productivity, our implicit hypothesis is that the share of GDP attributed to labour and the share of GDP attributed to capital are constant during the projection period. Thus the definition of economic growth through the concept of labour productivity does not dismiss the role of capital, nor the role of total factor productivity, but accounts for them in an indirect way.

Results from the Macroeconomic module indicate the number of people employed, unemployed, and out of the labour market, for each age and gender class. The ECHP dataset provides the number of wage earners in 2000 by age/gender and employment status; the number of wages earners is thus projected by keeping the percentage of subjects earning a wage in a given class constant during the whole projection period. The same procedure is adopted for self-employed income and private income; overlapping is allowed, however, since a wage earner may also be self-employed and/or receive a private income¹⁰.

Table 2 describes the number of persons earning wages and self income, divided by gender and age group, presented for each country as a percentage of total number in the first year of the examined period. The figures highlight the position of Italian workers, characterised by the highest percentage of male earners aged between 15 and 54 years, both in wage and self income categories.

Table 2 – Number of wage earners and self income earners by age group and gender in 2000

	Italy	Denmark	France	Germany	Netherlands	United Kingdom
Wage earners						
Total number	16.685.800	2.958.441	24.251.892	38.425.062	7.563.606	28.498.611
Young male	53,7%	44,4%	48,8%	48,2%	51,9%	45,2%
Young female	37,0%	40,2%	42,9%	38,4%	39,4%	42,4%
Middle Aged male	5,8%	6,6%	4,3%	7,3%	5,6%	5,1%
Middle Aged female	3,0%	6,5%	3,7%	5,2%	2,7%	4,9%
Elderly male	0,3%	1,2%	0,2%	0,5%	0,3%	1,2%
Elderly female	0,2%	1,0%	0,1%	0,3%	0,1%	1,2%
Self income earners						
Total number	5.035.478	293.648	2.126.527	3.481.303	491.924	3.291.545
Young male	59,6%	57,4%	57,7%	55,2%	54,3%	54,8%
Young female	20,4%	16,2%	20,1%	26,3%	29,5%	20,6%
Middle Aged male	12,3%	14,8%	13,0%	9,5%	8,1%	14,2%
Middle Aged female	3,0%	3,3%	6,1%	3,9%	2,9%	4,1%
Elderly male	3,8%	7,5%	1,9%	2,6%	3,6%	4,6%
Elderly female	0,9%	0,8%	1,1%	2,5%	1,7%	1,7%

Source: Own calculations based on ECHP figures.

The average amount of each income component (wage, self employed income and private income) is assumed to grow for each age/gender class according to exogenous labour productivity. This implies that the overall average amount (i.e. the average of all age/gender classes) grows at a rate that is a function both of the assumed labour productivity and of the age/gender structure of earners. For private income, growth is assumed to be the same as households' income, supposing households adjust their capital stock to their wealth through less or more saving; this avoids that, in the long-run, income shares converge to zero/one.

⁹ Wages and salaries, self employed incomes and private incomes are defined according to the standard ECHP definitions.

¹⁰ Note that, throughout the procedure, the ratio of elderly workers with respect to the elderly population is assumed to be constant and equal to the value in year the 2000, since no particular target for this residual class of workers can be considered relevant in the macroeconomic framework.

3.3. *The Benefits*

Finally, the number of social benefit recipients and the average value of the benefits by gender and age class are presented. The corresponding expenditure as a percentage of GDP are then calculated. In particular, the benefits considered in the projection model are old age and survivors' pensions, unemployment benefits, disability benefits, and social assistance benefits, defined according to the ECHP definitions. Table 3 presents the values at year 2000 for the six European countries, as a percentage of total population of the countries. In Italy, old age and survivors benefit are assigned to the highest percentage of inhabitants, followed by the United Kingdom, where, conversely, the average level of old age benefit is the lowest in the sample of countries considered in this study (see table 7). Denmark is characterised by the highest number of people receiving unemployment benefits, whereas Italy has the lowest percentage. Italy has the lowest percentage of people also in the case of social assistance benefits; this kind of benefit, characterised by particularly low average levels (see table 7), is widespread in the United Kingdom. Disability benefits cover, as well, the highest percentage of people in the United Kingdom.

Table 3 – Number of benefits recipients as a percentage of total population in 2000

	Italy	Denmark	France	Germany	Netherlands	United Kingdom
<i>Old Age and Survivors'</i>	25,6%	20,1%	23,5%	24,7%	17,8%	25,4%
<i>Unemployment</i>	1,6%	9,2%	7,0%	8,6%	3,3%	2,9%
<i>Disability</i>	3,7%	6,4%	6,5%	2,5%	6,3%	9,3%
<i>Social Assistance</i>	0,6%	4,0%	1,9%	2,2%	4,1%	13,0%
Total population	47.782.527	4.257.812	47.188.583	69.075.428	12.659.323	47.217.996

Source: Own calculations based on ECHP figures for year 2000

For all the benefits, with the exceptions of disability and old age, the number of recipients is calculated in a similar way to the procedure adopted in the Incomes module. For each employment status, the percentage of recipients of a particular benefit in a certain age/gender class is kept constant at its year 2000 level throughout the projected period.

The Benefits module is linked to both demographic and economic projections. The number of recipients is linked to the age and gender composition of the population, as derived from demographic projections. Population ageing, for example, is likely to reduce unemployment benefits, since the percentage of people getting them is lower among the elderly. The Macroeconomic module, on the other hand, allows prognoses that are consistent with respect to the number of people employed, unemployed and out of the labour market. Thus, for example, unemployment benefits grow whenever the Macroeconomic module projects an increase of the unemployment rate.

As for the average benefit, it is assumed to increase, within each class, according to the labour productivity, implying that the overall average amount (i.e. the average of all age/gender classes) increases at a rate that is a function both of the labour productivity and of the age/gender structure of recipients. All benefits are thus constrained to grow in line with the average wage.

For disability benefits and pensions, however, a somewhat different methodology is followed. In the case of disability, the number of recipients is determined as a constant fraction of employed workers, instead of as a fraction of the overall population. The reason for this approach rests in the link between disability and employment: first, people are required to have been employed to be entitled to disability benefits; second, in many cases disability is related to features of the job (dangerousness, unhealthy job conditions, and so on) or to accidents on the job. The average benefit, however, is assumed to grow with wages, as the other kinds of benefits.

As for pensions, given their importance in the overall welfare budget, benefits are modelled through a specific simulation unit, which deserves a lengthier explanation in Section 4.

3.4. Policy instruments allowed by the model

To allow the simulation of active policies the model has been made parametric to the following variables:

The number of recipients of disability benefits, unemployment benefits, and social assistance benefits. People receiving such benefits can be changed with respect to the selected scenario. In particular, at 2025 the percentage variation of recipients with respect to the baseline projections may be chosen, and the model will gradually distribute this variation across the 25 covered years. Elasticity matrixes are applied (see below) to take into account cross effects among benefits and between the considered benefit and the labour market.

The average amount of each benefits. The percentage variations of such amounts with respect to their level at 2000 can be chosen, as well as the time lag during which these variations are expected to be implemented; the model will linearly distribute the correction during the chosen time span. However, in this process, economic growth is not excluded, thus the final average benefits will result from the interaction between the imposed variation and the real economic growth.

The replacement ratio for new pensioners. A percentage variation of the average replacement ratio (i.e. average pension as a ratio of average wage) with respect to its

level at 2000 can be imposed, to be gradually implemented between 2000 and 2025. This variation is obtained without affecting the pension of people that are already pensioners, and gradually varying the replacement ratio for the flows of incoming pensioners.

The average retirement age. It can be changed to meet gradually a specific target increment (or decrement) at 2025. The middle-aged constitute the sensible class for this change. The variation of the retirement age obviously affects the number of pension beneficiaries, this is going to have cross effects on other benefits and on the labour market; these effects are modelled, as will be explained more in detail below, through elasticity matrixes.

4. Projecting pensions

Starting from the number of pensioners, projections should, in principle, simply reflect the application of the eligibility rules to the changing demography. Many relevant complications, however, mainly pertaining to the evolution of the labour market, cannot be dismissed.

In particular, the European objectives of increasing the employment rates, both of the elderly and of women, will influence labour market performance, determining two opposing effects on the number of pensioners. While an increase in the employment rate of the elderly is going to reduce the number in the short run, the greater employment rate of women will increase it in the long run.

The procedure adopted in the pension unit divides the pensioners into two broad families, the first constituted by the classes we called “sensitive classes”, and the second constituted by the classes we called “constant-ratio classes”.

The sensitive classes are constituted by people out of the labour force and aged more than 54. Constant ratio classes are constituted by people younger than 54¹¹, or people still in the labour force, like pensioners not fully retired; for these classes the proportion of pensioners is kept constant at the level of year 2000, as it was done for all the other benefits. The reason rests on one hand on the negligible role of the “constant-ratio classes” among the pensioners; and on the other on the scarce relevance of these classes for policy objectives. As for the first aspect, it is due both to the low incidence of pensioners among people younger than 54, and to the negligible number of people older

¹¹ Among them, there are particular pensioner categories, like very early retirees for special reasons and survivor children.

than 65 that are still in the labour force. For the second aspect, reform efforts are understandably addressed at increasing employment in working ages (i.e. 15-65), rather than at raising the employment rates of the elderly.

On the contrary, pensioners within the sensitive classes are projected in a more detailed way. The projection procedure can be summarised by referring to the stock of existing pensioners in each period; the flow of new pensioners, and the number of pensioners dying in each period.

The number of pensioners at time T , can thus be determined by adding, to the stock of pensioners at time $T-1$, the flow of new pensioners, and subtracting pensioners that die between $T-1$ and T . Given the wide age classes, the starting point to compute the flow of new pensioners for each year is constituted by the employed people aged 15-54 at time T ; we then assume that 40 years later all the pensioners will come from that class. The stock of pensioners at time $T+40$ can therefore be determined as a function of the employment rate at time T . From T on, the flow of new pensioners is computed yearly in order to linearly reach this level¹².

The average retirement period is calculated according to the most recent available mortality tables for each country, keeping them constant for the whole simulated period. We then assume each year a fraction of the previous year pensioners' population dies, this fraction is set equal to the reciprocal of the average retirement life.

The average pension includes not only the public pension, but also the supplementary (second pillar) and personal (third pillar) schemes. This choice, apart from being consistent with the data provided by the ECHP, stresses the focus of the analysis, which is on the adequacy of the welfare systems.

The pension formulae of each country are not explicitly modelled; rather the elements that are included are the replacement ratio and the pension indexation mechanism.

In each period T , the average pension is determined as a weighted average of the pension earned by pensioners existing at time $T-1$, and the pension calculated for new pensioners. The latter, is computed by multiplying the average wage at time $T-1$ times the replacement ratio. This replacement ratio is computed for year 2000 and, unless pension reforms are introduced, is kept constant throughout the whole simulation.

As for the indexation mechanism, pensions are wage indexed in Denmark and in Germany, while they are indexed only to prices in Italy and United Kingdom; hybrid

¹² Variations of this linear path may however occur, since the computed $T+40$ number of pensioners may change at each year T , in dependence of the employment rates, that may vary in accordance to the demographic, economic and policy settings.

situations are found in France, where the most part of the average pension (72%) is indexed to prices, and in the Netherlands, where the 96% of the average pension is indexed to wages.

5. Feedback effects

When the welfare system is modified in one respect, this is likely to have consequences both on other aspects of the same system, and on the overall economic performance. Thus, for example, reducing the beneficiaries of a particular subsidy is likely to vary the number of people asking for another one, or trying to find a job, thus affecting also labour market participation rates.

The methodology adopted for this kind of feedbacks, relies on the construction of matrices measuring, on the basis of ECHP data, the elasticity of the number of subjects receiving some kind of welfare benefits (or going to the job market), with respect to a given variation in the number of subjects entitled to a different kind of welfare benefit.

A first type of feedback effects, with respect to pension benefits, is intended to capture the changes in the number of people entitled to other benefits determined by a change in the number of people receiving a pension: if, for example, a higher fraction of women receives a pension because of a higher participation in the labour market, then a lower number of them is going to receive other kinds of social assistance.

A second type is directed at depicting the effects of changes in welfare policies, whenever active policies are simulated. One possibility, for example, is to vary directly the number of people entitled to old age benefits, disability benefits or social benefits, even in these cases elasticity matrices are computed to provide a measure of cross effects among benefit recipients (and of the consequences in terms of labour market participation).

Due to the institutional variety, the matrices differ by country and age class; they capture the effects of a lower/higher number of pension beneficiaries, disability allowances, unemployment benefits, and social assistance benefits.

6. The path determined by current pension reforms

European welfare systems have to confront demographic ageing on the ground of sound reforms. Among them, the reform of the pension system has deserved special attention in most of the countries, the reasons for this are twofold. On social grounds, the

necessity to protect in the long run the weakest segments of the population from the consequences of the shrinking contribution base, and the relevance - across genders, groups and cohorts - of a well functioning social security system. On economic grounds, the necessity to restrain the already high level of the share of welfare expenditure in the overall state budget and in GDP, and the perception of the burden that the various distortions, characteristic of most of the systems, would impose on the prospects of economic development.

As stated above, European governments are taking measures to prevent their systems to become unsustainable, frequently involving fine tuning of very country-specific parameters¹³; we had to devise, however, a synthetic way to model them within a unified framework. In particular we assumed for each country a percentage change in the average replacement ratio to be gradually achieved at 2025, in order to match the change in the benefit ratio¹⁴ assumed by EPC (2001).

Table 4 shows the percentage variations in the average replacement ratios we used in our projections, as well as the replacement ratios for incoming pensioners that allows to produce such variations during the considered time lag.

Table 4 - Replacement ratios for incoming pensioners

Countries	Average Repl. Ratio (*)	Consistent replacement ratios for incoming pensioners - percentage values (**)					
	Percentage var. 2000-25	2000	2005	2010	2015	2020	2025
Italy	-13,5	73,9	72,9	71,8	70,8	69,7	68,7
Denmark	-6	56,0	55,2	54,4	53,6	52,8	52,0
France	-17	77,3	74,5	71,8	69,0	66,2	63,5
Germany	-10	70,1	68,6	67,1	65,7	64,2	62,7
Netherlands	+1,5	83,7	84,6	85,5	86,4	87,3	88,2
United Kingdom	-12,5	63,2	61,1	58,9	56,8	54,6	52,5

Source: Own calculations.

(*) Percentage variation of average replacement ratio due to current reforms in the time-lag 2000-2025.

(**) Replacement ratios for pensioners getting their first pension in the given year, needed to bring the average replacement ratio in 2025 a level consistent with variations specified in the first column.

6.1. *The effect of current pension reform*

The macroeconomic performances are summarized in terms of GDP growth and employment in tables 5 and 6. Average GDP growth rates in the period 2000-2025 range from 1.57 of Germany to 1.89 of France; as already stated, however, given the assumption on labour productivity, the main determinant of the GDP growth in our framework is constituted by the employment path.

¹³ For a more detailed description of the reform enacted in European Countries see EPC (2001).

¹⁴ In the EPC (2001) study, the benefit ratio is computed as the average pension as % GDP per person employed.

Table 5 - Average GDP growth rates

Countries	2005	2010	2015	2020	2025	Average
Italy	1.73	1.76	1.89	1.72	1.48	1.71
Denmark	1.45	1.77	1.71	1.70	1.50	1.62
France	1.97	2.15	1.82	1.77	1.75	1.89
Germany	2.28	1.64	1.64	1.25	1.04	1.57
Netherlands	1.89	2.08	1.90	1.79	1.57	1.85
United Kingdom	1.74	2.04	1.67	1.53	1.35	1.67

Source: Own calculations.

Total employment rate is, indeed, rather stable for all the countries in the considered timeframe, with the exception of Italy, for which our hypotheses allowed for a higher reduction of unemployment; in some cases, namely Denmark and the United Kingdom, a noticeable reduction is observed. Relevant increases, however are observed for middle aged and young female (with the exception of young female in Denmark), while male appear to discount the effect of the higher female employment.

Table 6 - Employment rates

Countries	Young				Middle-aged				Total (except Elderly)					
	Male		Female		Male		Female		Male		Female		Total	
	2000	2025	2000	2025	2000	2025	2000	2025	2000	2025	2000	2025	2000	2025
Italy	73.83	75.42	44.80	54.56	40.22	48.26	15.47	29.27	68.21	68.89	39.54	48.14	53.82	58.63
Denmark	84.55	81.95	75.52	74.85	61.24	56.79	54.67	58.41	80.71	76.60	72.01	71.28	76.42	74.00
France	72.83	75.17	58.42	64.96	38.53	38.47	30.32	34.15	68.08	67.71	54.36	58.23	61.18	62.97
Germany	81.01	81.03	64.89	68.01	48.24	52.53	28.99	35.78	74.86	73.85	57.07	59.60	66.45	66.91
Netherlands	86.77	84.67	69.13	75.91	50.01	47.41	25.80	40.32	81.43	76.25	62.65	67.64	72.19	72.04
United Kingdom	82.63	80.52	70.18	71.19	59.82	57.26	41.45	47.23	79.16	75.23	65.59	65.59	72.44	70.50

Source: Own calculations.

The macroeconomic performance indicators just showed clearly reflect the assumptions concerning the participation rates, combined with the hypotheses of convergence towards structural unemployment. In particular, the fact that the structural unemployment rate is assumed to be stable during the considered 25 years, implies that in general the path of male employment rate is somehow displaced by the increase of the female rate.

The results concerning the average benefits and average personal incomes are showed in tables 7 and 8. The tables are especially designed to favour a comparison of the Italian situation with respect to the other countries.

Table 7 shows that for old age benefits all the countries, with the relevant exception of the United Kingdom, outperform Italy, and the gap is bound to increase in 2025¹⁵. France is steadily below the Italian level for unemployment and disability benefits, while Germany underperforms Italy for social assistance. The United Kingdom presents significantly lower benefits in all the considered sectors, and specially unemployment

¹⁵ Denmark rests slightly below Italy in 2000, but outperforms the country by 6 per cent in 2025.

and social assistance. The Italian situation clearly mirrors the relatively severe pension reforms, while social assistance benefits are increasing with respect to other countries.

Table 7 - The level of Italian average benefit with respect to European countries (Italy set to 100)

Countries	Old Age		Unemployment		Disability		Social Assistance		Total	
	2000	2025	2000	2025	2000	2025	2000	2025	2000	2025
Italy	100	100	100	100	100	100	100	100	100	100
Denmark	99	106	113	112	156	156	189	174	87	96
France	116	118	91	92	71	70	103	95	94	103
Germany	118	120	99	100	157	157	83	74	103	110
Netherlands	134	161	126	141	175	175	285	270	117	145
United Kingdom	85	80	43	42	83	83	36	32	59	62

Source: Own calculations.

The interpretation of the results in terms of welfare, however, must take into account that only cash benefits are considered; therefore the level of assistance provided is underestimated for those countries delivering higher level of benefits in kind.

Table 8 - The level of Italian average income with respect to European countries (Italy set to 100)

Countries	Wage		Self income		Total	
	2000	2025	2000	2025	2000	2025
Italy	100	100	100	100	100	100
Denmark	101	98	81	77	100	96
France	98	101	144	140	102	104
Germany	99	99	146	143	102	102
Netherlands	105	104	107	99	106	104
United Kingdom	98	96	107	104	99	97

Source: Own calculations.

No special variations are observed in average incomes between 2000 and 2025, with the exception of Denmark, whose position will possibly worsen with respect to Italy. As for self income, however, Denmark seriously underperforms the Italian level, while the Netherlands shows a relevant decline in the considered period, leading it from 107 per cent of the Italian average self income to 99 per cent. The fact that all the countries, except Denmark, show a notably higher level for the average self income with respect to Italy already in 2000, might certainly be due to some form of underreporting, but also to the presence, in Italy, of various forms of low paid or part time self employment.

As for the number of benefit recipients, table 9 shows, for Italy, a global slight decline of beneficiaries. An increase of unemployment benefits recipients is also projected for the middle aged, possibly due to the increased labour force participation, while the increase of pension recipients at 2025 is the combined effect of ageing and increasing employment rates for the middle-aged.

Table 9 - The average variation 2000-2025 in the number of recipients in Italy by gender and age class

	Old Age	Unemployment	Disability	Social Assistance
Young male	- 0.75	- 0.74	- 0.03	- 0.77
Young female	- 1.51	- 0.45	- 0.04	- 1.26
Middle Aged male	0.71	1.43	0.02	0.91
Middle Aged female	0.61	2.18	- 0.02	0.23
Elderly male	1.28	1.28	- 0.08	1.28
Elderly female	1.11	0.87	- 0.14	0.91
Total	0.96	0.00	- 0.06	- 0.53

Source: Own calculations.

Table 10 offers a comparison of the variation of the number of recipients and of the average benefits for all the considered countries. Italian trend is in line with the other countries; for pensions, however, while the variation of the number of pensioners shows an increase ranging from 2.11 per cent of the Netherlands to 1.4 per cent of Denmark, Italy is able to control the increase within 0.96 per cent. Also the increase of average pension for Italy is only 1.07 per cent, while for the other countries ranges between 1.82 per cent of the Netherlands and 1.10 of the United Kingdom.

Table 10 - The average variation 2000-2025 in the average benefit and in the number of recipients

Countries	Old Age		Unemployment		Disability		Social Assistance	
	Average Benefit	Nr. of recipients	Average Benefit	Nr. of recipients	Average Benefit	Nr. of recipients.	Average Benefit	Nr. of recipients
Italy	1.07	0.96	1.83	0.00	1.75	- 0.06	2.09	- 0.53
Denmark	1.35	1.40	1.77	0.15	1.75	- 0.12	1.75	- 0.09
France	1.14	1.64	1.89	- 0.51	1.75	0.14	1.77	- 0.42
Germany	1.15	1.22	1.86	- 0.44	1.75	- 0.16	1.63	- 0.13
Netherlands	1.82	2.11	2.28	0.68	1.75	0.10	1.86	0.35
United Kingdom	1.10	1.24	1.77	0.20	1.75	- 0.08	1.64	0.60

Source: Own calculations.

Pensions, however, show for all the considered countries the enacted reforms, that are able to contain the increase of the average benefits well below the growth rate of GDP.

Table 11 shows a projection of a modified pension equilibrium tax rates¹⁶, they are expected to rise for all the countries; for Italy, however, the increase is the lowest, being slightly above 2 per cent. This can certainly be due to an ageing process that is possibly more advanced with respect to other countries, but certainly also to the effective reform process undertaken in the Nineties.

¹⁶ The modified equilibrium tax rate represents a proxy of the tax rate that should be levied on labour income to pay current pensions once other payroll taxes have been paid. It has been computed adding the total pension expenditure to net labour incomes from ECHP, and then calculating the ratio between pension expenditure and the obtained grossed up income.

Table 11 - Pensions equilibrium tax rates in the selected European countries

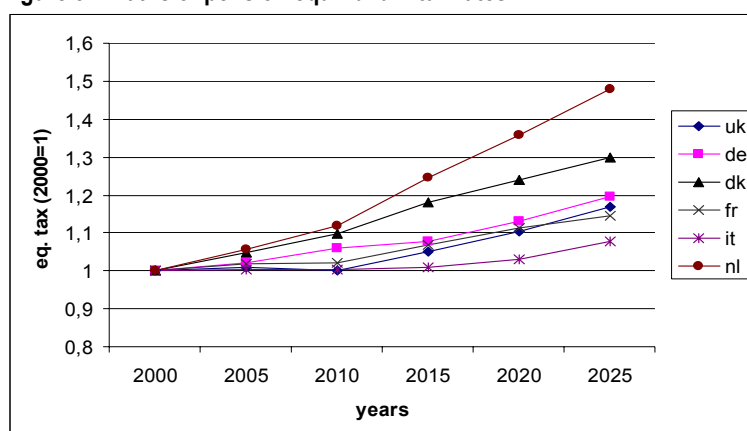
Countries	2000	2005	2010	2015	2020	2025	Variation 2000-2025
Italy	27.61	27.75	27.72	27.84	28.48	29.72	2.11
Denmark	15.03	15.74	16.49	17.76	18.64	19.53	4.50
France	24.56	25.02	25.09	26.27	27.35	28.12	3.56
Germany	24.09	24.59	25.55	25.93	27.24	28.82	4.73
Netherlands	19.39	20.47	21.67	24.14	26.34	28.64	9.25
United Kingdom	17.87	18.06	17.86	18.75	19.75	20.90	3.03

Source: Own calculations.

Figure 3 give the same information, but normalizes to one the 2000 tax rate for all the countries, with the purpose of facilitating the comparison among different paths. The Italian curve is the less steep, while the Netherlands shows the sharpest increase.

The modified equilibrium tax rate, however, should be interpreted with some caution, first because it does not take into account public debt situation of the countries, which requires, in some cases, like the Italian one, a stricter fiscal discipline; second because pension figures refer to the ESPROS aggregate, that includes some private and funded provisions, thus not all the pensions that will be paid may be included in the public expenditure. This observation is specially true for countries like United Kingdom and the Netherlands, given the relevant presence of pension funds.¹⁷

Figure 3 - Paths of pension equilibrium tax rates



Source: Own calculations.

As for the other social benefits, all the countries show a nearly stable level with respect to the GDP (see table 5); Italy, however, once pensions are excluded, confirms a

¹⁷ The implicit assumption in comparing the paths of these countries with the ones of countries like Italy, where nearly all the pension provisions are public, is that the composition of paid pensions in terms of private and public benefits will be constant during the simulated period, thus implying the same path for both, although different levels. Moreover, if we, reasonably, imagine that pension funds assets are kept at a constant fraction of GDP for countries where the second pillar is already well developed, the assumption that levied contributions have to match paid pensions even for funded provisions (thus making more reasonable the calculation of an equilibrium payroll tax rate) corresponds to a prudential assessment of financial market returns. As a matter of fact if all revenues of the pension funds are used to lower the contribution rate, the size of the pension funds assets will decline with respect to GDP. Therefore, they do not go to the complete advantage of the contribution rate, part of them, that we may prudentially assume that will equal the financial market returns, must be used to keep the size of the pension funds constant with respect to the GDP.

tradition of relatively low social protection expenditure, stable at 1.8 per cent of GDP, and with a prominence of disability benefits (1.35 per cent of GDP), even below the 2.20-2.29 range of the United Kingdom.

Table 12 - Social Expenditure (excluding pensions) as a fraction of GDP

	Italy		Denmark		France		Germany		Netherlands		United Kingdom	
	2000	2025	2000	2025	2000	2025	2000	2025	2000	2025	2000	2025
Unemployment	0.41	0.42	2.88	3.11	1.93	1.70	2.14	2.06	1.32	1.73	0.65	0.70
Disability	1.35	1.34	1.68	1.69	1.16	1.16	1.50	1.50	2.82	2.82	1.28	1.28
Social Assistance	0.04	0.03	0.78	0.79	0.40	0.35	0.53	0.52	1.36	1.49	0.27	0.31
Total Social Protection	1.80	1.80	5.35	5.58	3.49	3.21	4.17	4.08	5.49	6.04	2.20	2.29

Source: Own calculations.

As a concluding remark we may confidently state that the Italian reforms of the Nineties constitute a significant advance towards the sustainability of the public pension system, in particular compared to the more “cautious” steps undertaken by most of the other considered countries.

A pressing concern, however, is constituted by the prospective adequacy of the Italian welfare system: not only the pension levels are bound to be reduced as a consequence of the reform process, but the Italian welfare still grants a comparatively very poor support to other categories, even with respect to the other countries, and this situation seems destined to worsen in the future.

In this perspective, a reasonable objective in terms of increased labour participation must not only be seen as a mean to improve the financial sustainability of the pension system, but also as a way to subtract a productive fraction of the population from the reliance on a shrinking net of public provisions.

7. Increasing Labour Participation

7.1. Employment and Unemployment within the Lisbon framework

In order to counteract the shrinking of the workforce that will result when the baby-boom cohorts begin to retire, the Lisbon and Stockholm Europe Councils (in 2000 and 2001) have set three targets for employment rates in 2010. These targets are as follows:

- a) Middle-aged workers (aged between 55 and 64) should account for at least 50% of the total middle-aged population;
- b) Female workers should account for at least 60% of the total female population;
- c) The total number of workers should be at least 70% of the total population.

Table 13 illustrates the different positions of the countries, analysed with respect to the Lisbon and Stockholm targets.

Table 13 - Employment rates in Europe in 2000

Countries	Employment rates, differences w.r.t. Lisbon targets in brackets		
	Total	Middle-aged workers	Female workers
Denmark	76.4 (+6.4)	58.0 (+8.0)	72.0 (+12.0)
France	61.2 (-8.8)	34.3 (-15.7)	54.4 (- 5.6)
Germany	66.4 (-3.6)	38.5 (-11.5)	57.7 (- 2.3)
Italy	53.8 (-6.2)	27.4 (-22.6)	39.5 (-20.5)
Netherlands	72.2 (+2.2)	37.9 (-12.1)	62.6 (+2.6)
United Kingdom	72.4 (+2.4)	50.5 (+0.5)	65.6 (+5.6)

Source: ECHP figures, corrected to match OECD labour force statistics, 2002.

The table shows that these targets will prove challenging for some of the countries. From the reported values for employment rates in the year 2000, the starting year for our projections, it is clear that Italy, as well as other countries, like, in our sample, France, Germany and the Netherlands, suffer from low employment rates for middle-aged workers. For Italy, the table also shows particularly low levels for total employment and female employment.

The “Lisbon Scenario” of ECP (2001), which stands at the basis of our analysis, assumes that total unemployment rate (i.e. for all age and gender classes, except the elderly), will converge to 4% for all the countries in year 2045; for the sake of our projections we accordingly assume a linear convergence to compute values between 2005 and 2025.

7.2. *Paths towards the Lisbon targets*

Some European countries, given their starting position, will have to devise an adequate set of policies in order to achieve the Lisbon and Stockholm targets without excessive social costs. Intuitively, the transition towards these targets involves a certain effort or cost. Policies are likely to keep this effort to a minimum, and this, in turn, should result in a smooth path of employment figures.

Therefore, a minimisation procedure is introduced in order to determine the number of employed people for each age/gender class in order to match the Lisbon and Stockholm targets. This minimisation procedure allows all the adjustments to be as smooth as possible within the timeframe considered, given that the six countries have to achieve the employment rate targets by 2010.

Once the number of employed people is determined, the number of unemployed in each age/gender class is computed as a function of the exogenously assumed total unemployment rates.

The number of people out of the labour force is then computed as the difference between the population and the sum of employed and unemployed people, this in turn leads to the computation of the participation rates, that are in this case endogenous.

7.3. *Main results high employment*

The growth rates of GDP and the employment rates calculated within the Lisbon scenario are shown in tables 14 and 15. The GDP grows at an average rate ranging from 2.42 per cent of Italy to 1.76 of Denmark and Germany.

Table 14 - Average GDP growth rates in the Lisbon scenario

Countries	2005	2010	2015	2020	2025	Average
Italy	4.19	3.91	1.36	1.47	1.24	2.42
Denmark	2.06	1.72	1.71	1.75	1.58	1.76
France	3.64	3.42	1.56	1.51	1.48	2.32
Germany	2.31	2.08	1.80	1.44	1.17	1.76
Netherlands	2.30	2.20	1.93	1.85	1.63	1.98
United Kingdom	2.15	2.04	1.64	1.65	1.43	1.78

Source: Own calculations.

As table 14 shows, Lisbon and Stockholm target are fully met in 2025; the assumption of a “hard Lisbon framework”, however, forced the model to reach them strictly in year 2010. Therefore in some countries (see for instance Italy) a sharp rise in the number of employed people, and consequently in GDP growth, is displayed between 2000 and 2010. Thereafter, GDP (and employment) growth rates are much smaller. The plausibility of such a framework may be certainly debatable, given the actual situation in 2004 for a country like Italy; the simulation, however, in our opinion helps substantiating how demanding the target might be at 2010, and, at the same time, shows that it is not overambitious as a long run benchmark for the next 25 years.

Table 15 - Employment rates in the Lisbon scenario

Countries	Young				Middle Aged				Total (except Elderly)					
	Male		Female		Male		Female		Male		Female		Total	
	2000	2025	2000	2025	2000	2025	2000	2025	2000	2025	2000	2025	2000	2025
Italy	73.83	86.13	44.80	65.69	40.22	59.06	15.47	43.44	68.21	79.75	39.54	60.04	53.82	70.00
Denmark	84.55	85.73	75.52	76.73	61.24	62.43	54.67	55.88	80.71	80.79	72.01	72.21	76.42	76.59
France	72.83	82.33	58.42	68.04	38.53	54.54	30.32	46.44	68.08	76.68	54.36	63.31	61.18	70.00
Germany	81.01	83.74	64.89	68.10	48.24	61.45	28.99	42.67	74.86	78.11	57.07	61.47	66.45	70.00
Netherlands	86.77	86.85	69.13	74.95	50.01	61.97	25.80	43.50	81.43	81.23	62.65	67.64	72.19	74.58
United Kingdom	82.63	84.21	70.18	72.31	59.82	61.40	41.45	43.58	79.16	79.03	65.59	65.59	72.44	72.44

Source: Own calculations.

Average benefits, shown in tables 16 with respect to Italy, present, with respect to the previous scenario, a substantial difference: while the gap between Italy and the countries delivering higher benefits had a general tendency to widen in the earlier framework, the high growth rates implied by the Lisbon targets significantly reduces this tendency, in many cases reversing it.

Table 16 - The level of Italian average benefit with respect to European countries (Italy set to 100)

Countries	Old Age		Unemployment		Disability		Social Assistance		Total	
	2000	2025	2000	2025	2000	2025	2000	2025	2000	2025
Italy	100	100	100	100	100	100	100	100	100	100
Denmark	99	93	113	113	156	156	189	170	87	86
France	116	112	91	94	71	70	103	93	94	97
Germany	118	107	99	101	157	157	83	73	103	100
Netherlands	134	144	126	140	175	175	285	263	117	131
United Kingdom	85	75	43	43	83	83	36	31	59	56

Source: Own calculations.

This effect is not as neat whenever average labour incomes are considered, as shown by table 17.

Table 17 - The level of Italian average income with respect to European countries (Italy set to 100)

Countries	Wage		Self income		Total	
	2000	2025	2000	2025	2000	2025
Italy	100	100	100	100	100	100
Denmark	101	98	81	8	100	96
France	98	101	144	139	102	105
Germany	99	98	146	142	102	102
The Netherlands	105	104	107	98	106	103
United Kingdom	98	96	107	104	99	97

Source: Own calculations.

The growth of the number of benefits recipients in Italy, is lower for social assistance and pensions with respect to the previous scenario (described in table 9), but strongly higher for disability and slightly higher for unemployment, as a result of the increased labour participation.

Table 18 - The average variation 2000-2025 in the number of recipients in Italy by gender and age class

	Old Age	Unemployment	Disability	Social Assistance
Young male	- 3.34	- 0.79	0.67	- 0.70
Young female	- 2.50	- 0.06	0.67	- 1.84
Middle Aged male	0.20	1.68	0.67	0.75
Middle Aged female	0.33	3.03	0.65	- 0.76
Elderly male	1.31	1.25	0.63	1.25
Elderly female	1.19	0.88	0.60	0.92
Total	0.87	0.31	0.60	- 0.82

Source: Own calculations.

Also the average pension levels, described in table 19 shows an higher increase with respect to the previous scenario (see table 10), presumably due to the increased employment and labour participation of the middle-aged.

Table 19 - The average variation 2000-2025 in the average benefit and in the number of recipients

Countries	Old Age		Unemployment		Disability		Social Assistance	
	Average Benefit	Nr. of recipients	Average Benefit	Nr. of recipients	Average Benefit	Nr. of recipients.	Average Benefit	Nr. of recipients
Italy	1.75	0.87	1.77	0.31	1.75	0.60	2.19	- 0.82
Denmark	1.51	1.42	1.77	0.00	1.75	0.01	1.75	- 0.22
France	1.61	1.48	1.92	- 0.16	1.75	0.56	1.78	- 0.29
Germany	1.36	1.12	1.86	- 0.78	1.75	0.01	1.66	- 0.25
The Netherlands	2.03	2.04	2.19	0.56	1.75	0.23	1.85	0.29
United Kingdom	1.25	- 0.16	1.76	1.27	1.75	0.03	1.63	0.54

Source: Own calculations.

Excluding pensions, in general, the Lisbon framework allow for a higher reduction, or a lower growth, of social expenditure on GDP. Table 20 confirms the effectiveness of a higher employment rate in reducing the reliance on social provisions, as well as in making the system more sustainable through the increase of economic growth.

Table 20 - Social expenditure (excluding pensions) as a fraction of GDP in the Lisbon scenario

	Italy		Denmark		France		Germany		Netherlands		United Kingdom	
	2000	2025	2000	2025	2000	2025	2000	2025	2000	2025	2000	2025
Unemployment	0.41	0.38	2.88	2.88	1.93	1.68	2.14	1.80	1.32	1.59	0.65	0.62
Disability	1.35	1.35	1.68	1.68	1.16	1.16	1.50	1.50	2.82	2.82	1.28	1.28
Social Assistance	0.04	0.03	0.78	0.74	0.40	0.33	0.53	0.49	1.36	1.41	0.27	0.30
Total Social Protection	1.80	1.75	5.35	5.30	3.49	3.17	4.17	3.79	5.49	5.82	2.20	2.20

Source: Own calculations.

Although the higher employment has been shown to have ambiguous effects on the number of benefit recipients, specially for disability and pensions, which are bound to increase in the long run with workers, the equilibrium tax rates for pensions presented in table 21 strongly benefit from the positive effect of the higher employment on the growth of the wage bill.

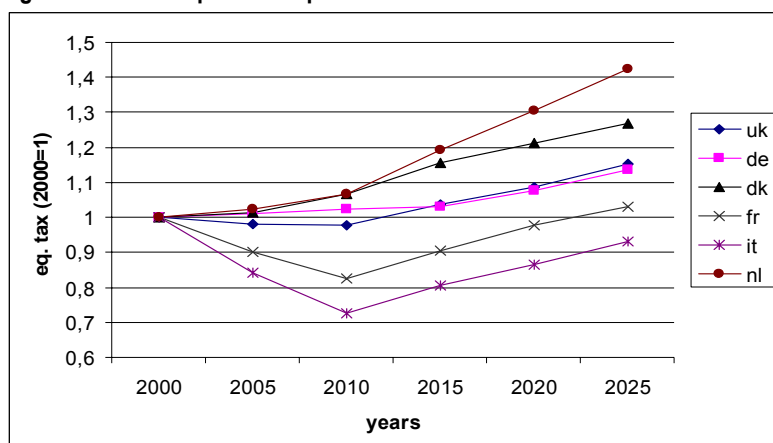
Table 21 - Pensions equilibrium tax rates in the Lisbon scenario

Countries	2000	2005	2010	2015	2020	2025	variation 2000-2025
Italy	27,61	23,21	20,08	22,25	23,83	25,70	-1,91
Denmark	15,03	15,23	16,05	17,36	18,22	19,07	4,04
France	24,56	22,16	20,26	22,24	23,96	25,29	0,73
Germany	24,09	24,33	24,62	24,81	25,90	27,36	3,27
The Netherlands	19,39	19,87	20,66	23,15	25,32	27,62	8,23
United Kingdom	17,87	17,50	17,45	18,51	19,43	20,57	2,70

Source: Own calculations.

Figure 4 confirms this datum, and shows a “curious” decline of the tax rate for some countries between 2000 and 2010; this is the effect of the drastic assumption concerning the reaching of the Lisbon-Stockholm target by 2010.

Figure 4 - Paths of pension equilibrium tax rate



Source: Own calculations.

8. Conclusions

Our results are substantially consistent with EPC (2001) projections and with national strategy reports on pensions. Some differences arise, however, specially due to the following reasons:

- We assume slightly different populations dynamic with respect to EPC and national strategy reports;

- ECP and strategy reports only project public pension expenditure, while, consistently with ECHP figures for old age benefits, we include the private provisions. Our “modified equilibrium tax rate” may seem inadequate in countries such as United Kingdom, where private pensions have a fundamental role in providing old age income. Specially in such countries, however, it may not be considered a direct index of sustainability of public finances, it captures, instead, the quota of aggregate labour income that is devoted to social security payments, and remains relevant for the purposes of a distributive analysis.

- Attention must be paid to the pensions in the Lisbon framework. The effect of the scenario on pension expenditure is not obvious. As a matter of fact, higher participation rates may imply a higher burden of future pensions on GDP in the long run, while certainly improving sustainability, as showed by the lower equilibrium payroll taxes.

The Italian welfare state was traditionally characterised by a comparatively high level of expenditure on pensions with respect to other European countries, and a low level of other kinds of benefits. The reforms of the Nineties are not likely to modify this situation, although significantly contribute to pension sustainability.

As a consequence, Italy cannot certainly be considered behind the other countries on the road of pension reforms, on the contrary it may well be positioned at the frontier. The major worry, however, concerns the adequacy of the system, that is going to reduce pension provisions, without substantially improve other kind of assistance. In this perspective the recent tendency towards less defined and more unstable career paths, again hinders the adequacy of a system that had in the protection of employment a central characteristic, and possibly demands for a global rethinking.

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