1 Introduction

The world population is aging fast. In 2000 individuals aged 65 years or more represented about 7 percent of the world population, up from 5.2 percent in 1950. Yet United Nations projections suggest that this share of the aged will double to reach 16 percent in 2050. The population aging is even more pronounced if one considers only the more developed regions of the world. The fraction of elderly individuals—those aged 65 years or more—in Europe, Northern America, Australia, New Zealand, and Japan has already increased from 8 percent in 1950 to 14 percent in 2000, and is forecasted to reach 26 percent in 2050.

This dramatic demographic dynamics is the result of a contemporaneous drop in mortality and fertility rates. The reduction in mortality seems to represent a long-lasting trend, which has already generated substantial longevity gains during the last fifty years. UN data indicate an increase in the average world life expectancy at birth from 46.5 years in 1950 to 65.4 years in 2000, yet further longevity gains are forecasted, with the average life expectancy reaching 74.3 years by 2050. Also the drop in fertility seems to follow a trend, although in the more developed countries the large fall in the number of births has mainly occurred during the eighties and nineties and is now expected to stabilize. According to these forecasted demographic dynamics, aging will hence continue.

Population aging bears significant implications for the economic environment. The structure of production may have to adjust to accommodate a labor force with a different age composition. Individuals may respond to their increased longevity by saving more for old age consumption, thereby leading to higher aggregate savings and to a larger stock of physical capital. The composition of the aggregate demand may also change, since a graying society will express different needs, and presumably higher demand for goods and services for the old, such as recreational entertainment and long-term care. The relative importance of the different schemes in the welfare state will also be affected, with more emphasis being posed on programs targeted to the elderly, such as social security, health insurance, and long-term care.

Aging has also dramatic consequences for the functioning of unfunded, or pay-as-you-go (PAYG), social security systems. In an unfunded system, contributions imposed on the labor earnings of covered workers are used to provide pension benefits to current retirees. Thus aging has a direct impact on the financial solvency of social security, since it tends to increase the fraction of recipients—the retirees—while reducing the proportion of contributors—the workers. To restore the financial balance of the system, either pension benefits have to be reduced or the tax burden on the workers has to be increased. The magnitude of this phenomenon is captured by the changes in the old age dependency ratio, which is defined as the ratio of elderly (aged 65 years or more) to adult individuals (aged between 18 and 64 years). In Italy and Spain this ratio is projected to double in less than fifty years, increasing respectively from 27.9 and 26 percent in 2000 to 64.5 and 63.5 percent in 2050. Together with these changes in the age composition of the population, most OECD countries have also experienced a large drop in the labor force participation of middle-aged and elderly workers. These early exits from the labor market, which were induced by the introduction—since the late sixties—of generous early retirement schemes, have further increased the number of retirees—hence contributing financial distress to the systems.

The scale of population aging, and its dramatic effects on the unfunded pension systems, have captured the attention of economists, media, and policy-makers—giving rise in several European countries to a flurry of pension reforms. During the eighties and nineties, in fact, incremental policies that extended the coverage and generosity of the welfare state were progressively abandoned, while mild retrenching measures were instead adopted. Most reforms amounted only to moderate variations in the parameters of the systems, which did not modify their underlying unfunded nature or defined benefit[1] structure. Yet sometimes these conservative changes to the benefit calculation criteria, to the eligibility requirements, to the indexation rule, and particularly to the effective retirement age managed to reduce the generosity of these systems—often along a lengthy transition period—and thus to enhance their long-term financial sustainability. To summarize these different scenarios, EU official projections on the future financial sustainability of European social security systems forecast changes in pension expenditure for the next fifty years to range between a small reduction in the United Kingdom—from 5.1 percent of GDP in 2000 to 3.9 percent in 2050—and a large increase in Spain—from 9.4 to 17.7 percent, depending on the different magnitude of the aging process, of the initial status quo and of the reforming experience of the last decades.

These calculations, however accurate, fail to consider that the design, the rules or the crucial parameters of the social security systems may further be modified. For instance, will the legislated—but yet to be introduced—retrenching measures ever be implemented? Or will policy-makers decide to renege on reforms adopted by previous governments—as in Germany during the nineties—and thus to stop their phasing in? In other words, how will further aging affect the development of these unfunded pension systems?

Conventional economic wisdom suggests that further aging will require additional retrenchment efforts to limit the growth of pension spending. Indeed, even if per-capita pension benefits are reduced, aggregate pension spending—and hence social security contributions—is still likely to rise, due to the increasing proportion of retirees. Yet, unlike welfare state expansion measures, retrenchment policies are extremely unpopular. Welfare states enjoy extended support among pensions' recipients and bureaucrats, who strongly oppose any benefit reduction. Electoral concerns—and political pressure by unions and lobby groups—may thus dictate the social security policy decisions of policy-makers, who face a political plea not to retrench.

This book acknowledges that social security policy decisions often go beyond economic theory into the realm of politics. The crucial insight of this political economy approach is that social security policies—also in response to demographic shocks—need not to enhance economic welfare, but only to be supported politically. In democratic countries, this typically amounts to obtaining the support of a majority of the Parliament or, more directly, of the electorate, although a broader consensus may be needed to overcome the existence of de jure or de facto political veto players. This intuition carries an additional powerful consequence: normative economic analysis may fail to provide useful policy recommendations, unless they lead to the design of *politically* sustainable reform packages.

The task set up for this book is to provide a *quantitative assessment* of how these electoral—and more generally political—concerns by the policy-makers will shape the response of the existing social security systems to the expected demographic dynamics in six aging countries —France, Germany, Italy, Spain, the United Kingdom, and the United States. How will social security systems be modified to obtain the political support of an older electorate in a graying economy? Will the retrenchment policies advocated in the economic literature—for instance, a reduction in the pension benefits' generosity and the increase in the effective retirement age—be politically feasible? Throughout the book, the focus of analysis will hence be on the *political sustainability* of social security regimes or reforms in aging societies. Since policy-makers are recognized to have electoral concerns, political sustainability of social security will indicate the existence of a political majority, in the Parliament or among the electors, that is willing to support the system in all its provisions—such as retirement age, contribution rate, eligibility criteria, and benefit calculation rules.

The choice of these six countries enables to gain a broad perspective on the political response to aging in developed economies. In Italy and Spain, the Mediterranean welfare state—largely centered on the social security system—will be exposed to a dramatic hike in population aging, whereas in the United Kingdom and the United States, a less pervasive welfare system, featuring a shared private and public responsibility in the provision of retirement income, will face less extreme demographic dynamics. Between these two polar cases, the analysis of France and Germany depicts the reaction of large continental welfare states to a sizable demographic challenge. The different social security status quo, the unequal magnitude of the aging process, and the variety of political systems and institutions among these countries will result in quantitatively different future social security scenarios; the qualitative message will, however, coincide.

The economic and political literatures have produced a wide body of research on the determinants of the initial introduction of these unfunded social security systems and on the motivations of their rapid development into the most relevant welfare state program. Paternalistic and equity principles may have played a crucial role, as social security prevented elderly people from falling into poverty, but this public intervention may also be justified by private markets' failure in providing life annuity. Political theories associate the industrialization process and the appearance of left parties and unions with the initial establishment and the large growth of welfare policies, while diverse welfare scenarios in equally developed economies are often attributed to the effect that different political institutions may have on the policy-makers' decision process. Yet the analysis of the expansion of the welfare state may prove of little help in understanding a possible retrenchment phase induced by the aging process. The extension of the coverage and the rise in the pension benefits' generosity that characterized the growth in social spending since World War II are popular measures that typically generate positive electoral returns. The politics of welfare state retrenchment is instead an exercise in electoral blame avoidance —since retrenching measures tend to impose large costs on specific groups of voters, while creating only dispersed and uncertain gains. Exploiting external constraints to reduce the political accountability of these policies or adopting "divide-and-rule" strategies may help to minimize electoral backslashes, but the relevance of electoral concerns remains crucial.

An analysis of the political sustainability of social security under aging thus needs to examine the individuals' position on social security issues in order to assess the political relevance of these vested interests. Preferences over social security typically depend on an individual's age—since different cohorts of people face different remaining periods of contributions and benefits, but also on the redistributive design of the system. Retirees who receive a pension benefit at no current cost, middle-aged individuals who consider past contributions to the system as a sunk cost, or low income young individuals who benefit from within cohort redistribution may experience an increase in their economic well-being, thanks to social security. These individuals, who represent the constituency of the welfare state, will thus oppose retrenchment, and their electoral push may lead policy-makers to refrain from reforming the system. These electoral considerations are at the heart of the theoretical framework used in this book to assess the political sustainability of social security and can easily be embedded in a simple majority voting model—or in its widely used median voter's application.

The aging society hands over to the policy-maker a crucial trade-off between economic efficiency and political accountability. In fact demographic dynamics affect the individuals' preferences over social security—through changes in the average return from the pension system—but also the political process—through the aging of the electorate. In an environment with a stable employment the average internal rate of return of a PAYG social security system is equal to the sum of the population and the productivity growth rate. Yet individual returns are also affected by the survival probabilities that determine the length of the retirement period. Aging thus reduces the average return, although longevity gains may dampen this effect, and should induce the agents to reduce their support for social security. In the political arena, however, the aging society augments the political relevance of the elderly voters—those close to retirement. As the identity of the pivotal voter changes—and the median voter becomes older—the political support for social security increases.

The impact of the demographic process on the long run political sustainability of social security depends also on some characteristic features of the system. For instance, pension schemes enabling massive early retirements, as in France and Italy, amplify the negative impact of aging on the average profitability of the system, since the growing share of middle-aged individuals will be induced to retire early rather than continue to contribute to the system, while countries with high pension spending, such as Italy, may already experience too severe economic distortions because of the large social security contribution rate.

The simulations of the political economy model used in this book portray a grim picture for the future of these systems—well beyond the typical predictions by several international institutions, which forecast moderate to large increases in pension spending. Under population aging the political push—corresponding to the aging electorate—is forecasted to dominate the economic elements—consisting of the reduction in the average profitability of the system. Pension spending is estimated to rise sharply in all six countries, albeit with some relevant quantitative differences. The largest increases are expected to occur in Spain, the fastest aging country, but also in the United Kingdom, with contribution rates rising respectively from 21.3 and 14.5 percent in 2000 to 45.5 and 33.2 percent in 2050. Yet Italy would still experience the largest contribution rate, 50 percent. These significant rises in the social security contribution rate, and thus in the overall pension spending, would nevertheless be accompanied by some retrenching measures, with pension benefits′ generosity falling—in France, Germany, Italy, and Spain. In the United Kingdom and the United States, higher social security contribution rates would instead be associated with more generous pensions.

The book introduces an additional specification of the political economy model, which considers economic distortions in the labor market, by allowing workers to reduce their labor supply in response to large increases in the social security contribution rates. These simulations suggest that, even in presence of labor market distortions, the political forces dominate and social security spending is still forecasted to increase, albeit less than in the previous case. Under this scenario, for instance, the Spanish and British contribution rates would be estimated to reach respectively 37.5 and 31.7 percent, while the largest contribution rate would be 46.2 percent in Italy.

Despite the bleak scenario portrayed by these simulations, a strong policy implication emerges. Postponing retirement represents an effective measure to limit the increase in pension spending induced by population aging—as measured by the social security contribution rate—while typically increasing the generosity of the system. The intuition is straightforward. A rise in the effective retirement age moderates the political demand for more social security, since it reduces the expected retirement period, while increasing the contribution period for the decisive voter. This policy measure is particularly successful in those countries with a low initial effective retirement age, such as France and Italy, in which a rise in the retirement age to 65 years would reduce contributions by around 12 percent. In all other countries the effect would be smaller, but still sizable.

However, is this policy measure politically feasible? Would individuals be willing to work longer years? Simulations on the political support to postponing retirement give an encouraging picture. In all countries a majority of voters is expected to support an increase in the retirement age. In fact aging tends to decrease the individuals lifetime income—due to the presence of a large social security system whose profitability will largely drop—while lower pension benefits will reduce the incentives to retire early. These two effects will hence induce the electors to postpone retirement.

A key message of the political economy approach of this book is that an aging society leads to large increases in pension spending, because of the political accountability of the policy-makers. Policy-makers will likely determine the pension policy in order to favor their aging electorate and hence to increase the probability of being re-elected. Delegating part of the responsibility for the pension policies to a supranational institution, such as the European Commission, could help relaxing these political constraints, as the national policy-makers could blame the supranational institution for any unpopular reforms.

The nonelected supranational institution could thus give voice—and votes—to young or yet to be born individuals who will largely be affected by the future consequences of the current policies. Yet the recent failure to approve the European constitution in the Dutch and French referenda shows the drawback of this strategy: when given the opportunity, voters may oppose this economic policy delegation.

After this brief introduction, chapter 2 provides a detailed overview of the social security systems in six countries—France, Germany, Italy, Spain, the United Kingdom, and the United States—that encompasses their main institutional features, the reform measures implemented in the last decade, a discussion of the OECD official pension spending projection and an analysis of a labor market trend—early retirement—typically induced by the design of the system. This chapter includes also a brief overview of the main aspects of population aging common to the six countries and of its impact on the political representation. Chapter 3 summarizes the main economic and political theories of welfare state expansion, and discusses the crucial differences between theories of expansion and of retrenchment. Chapter 4 provides a formal definition of political sustainability, describes the theoretical framework used throughout the book and discusses the calibration and simulation issues, whose results are then presented in chapter 11. Chapters 5 to 10 address the political sustainability of social security in each of the six countries.

Each chapter begins with a brief historical detour and a detailed description of the system, then reports on the country's demographic dynamics, and finally concentrates on the main focus of this book, by examining how the system is expected to change to retain its political sustainability in 2050. Most chapters include an analysis of recent reforms, based on the theoretical framework presented in this book, but also on alternative theories. Chapter 7 on Italy devotes space to explaining the Amato and Dini reforms of the nineties, and to examine their effects on the long-run political sustainability of the system. Chapter 8 discusses a "silent" reform of the Spanish system perhaps agreed upon in the Pacto de Toledo. Chapter 9, on the United Kingdom, provides an evaluation of the 1999 Blair reform, which substituted the earning related pension scheme (SERPS) with a nearly flat benefit scheme (S2P), while chapter 10 discusses some of the redistributive feature of the US social security system and the recent Bush reform plan. Finally, chapter 11 provides a comparison of the simulated changes in the social security systems of these six countries, which will be needed to retain the support of a majority of the aging electorate. A discussion of the political feasibility of the main policy implications arising from the simulations—postponing retirement age—and of the opportunity of delegating pension policies to a supranational authority concludes chapter 11.