

# Chapter 1

## Introduction

*The beauty about social insurance is that it is actuarially unsound. A growing nation is the greatest Ponzi game ever contrived.*

Paul A. Samuelson (1967)  
(Economist)

*Why should I care about future generations, what have they done for me?*

Groucho Marx  
(Marx brother)

### 1.1 Not quite a once upon a time...

It almost sounds like a fairy tale. Once upon a time, there was a people living happily together. They went forth and reproduced, one generation caring for the next, the young caring for the old. But as time went by, for a mysterious reason unknown to the people, ever fewer babies were born. Gradually it dawned upon the people that this could imperil their happiness ever after, so they decided to send their wise folks (those who possessed no other really useful craft, a.k.a. political scientists and economists) to an ivory tower to think about a solution for this problem...

Yet unlike in a fairy tale, magic beans or the miraculous deeds of a wizard will not help. The aging of societies in western democracies represents a massive economic and societal challenge. It has been widely referred to as “looming disaster”, “demographic crunch” or “population meltdown”. Unlike other developments, however, it has been predicted, calculated, ex-

pected. Demographers and statisticians have closely followed and documented the fall in fertility rates and the increases in longevity. Projections by national and international statistical offices on the future development of societies's age pyramids and dependency ratios abound. Hence, this phenomenon came neither overnight nor in disguise. It has been recognized by policy-makers, scientists, pundits and the public during the last two decades or so.

The consequences of population aging are primarily economic in nature. It leads to a shrinking work force, which in turn will affect productivity growth, aggregate GDP growth, government budgets, and the sustainability of systems of old age provision. Although there are studies by the European Commission, the OECD (Organisation for Economic Co-operation and Development) and other independent researchers estimating the impact on economic growth and productivity (see Bloom et al. (2011); Carone et al. (2005); Martins et al. (2005); McMorro and Röger (2003)) much more attention has been paid to the consequences for pension systems and their fiscal implications. The focus on the latter aspects comes as no surprise. At an individual level, a pension scheme is a device to transfer current resources into the future. The aim is ensure sufficient consumption in old-age when, due to retirement, working income is no longer available. Hence such a system directly and substantially affects the well-being of retired individuals. What is more, the redistributive nature of changes in pension systems are much more obvious than in the case of growth and productivity related issues, even though the latter two also clearly involve distributional issues.

Almost all pensions systems in the industrialized world are to a large extent, but often not exclusively, based on a pay-as-you-go (PAYG) principle. This means that current workers pay current retirees' pension benefits through a tax that is levied on their working incomes. Hence, changes in pension benefits or contribution rates are immediately felt by the participants of the system. A reduction in the size of the working age population and a simultaneous increase in the number of pensioners makes it obvious that such a system will need to change the rate of contributions and/or benefit levels. Given that projected population changes are dramatic, with old-age dependency ratios<sup>1</sup> expected to rise by almost 30 % in the Euro-area and working age population expected to fall at the same time by almost 16% until the year 2050 (ECB (2006)), these changes have

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<sup>1</sup> The dependency ratio is here defined as the ratio of people over the age of 64 to those of working age (15-64).

to be of a major scale. While there is quite some cross-country variation within western countries with Spain, Italy and Japan projected to have the highest dependency ratios by 2050 (0.68, 0.65 and 0.72 respectively) whereas the UK and U.S. will have the lowest (0.38 and 0.32 respectively), the trend is very much of the same direction everywhere.

Any change in a pension system of any industrialized country will thus involve winners and losers. Policy reforms that are not merely Pareto improvements or do not allow the implementation of a simple compensation scheme<sup>2</sup> for the losers, pose the most interesting and most difficult to analyze policy questions. If there were no redistributive issues involved, a classical normative economic analysis would compare the efficiency properties of different systems (or policy proposals for that matter) and would then suggest implementation of the most desirable one (with the Pareto criterion being one possible approach to determine “desirableness”). However, once matters of redistribution are involved, this approach is no longer valid. In this case, no Pareto improvements exist, the distributional issue becomes the core problem and questions of political decision making procedures come to the fore. Analyses of these kinds of problems are inherently “political” in the sense that one must examine the political environment to understand which solutions are feasible and which are not. A normative economic analysis is no longer sufficient. Now the analyst must consider the different voting coalitions that could form and the institutional structure of the decision making process, i.e. who may vote, how are representatives chosen, where lies the agenda-setting power, what is the quorum, does delegation of authority take place and so forth. As a response to the analytical intricacies, economics and political science alike have seen the rise of sub-fields explicitly dealing with these aspects, starting with the seminal contributions of Downs (1957) and Arrow (1963) and the establishment of “Social Choice” as a distinct field, accompanied and complemented by the study of “Public Choice” (for an overview see Mueller (2002)) up to what is currently being called “New Political Economy”, “Political Economics” or “Formal Political Theory” (see Persson and Tabellini (2000); Drazen (2000); Austen-Smith and Banks (1998, 2005)).

This dissertation is an exercise in political economy analysis. Broadly speaking, political economy tries to explain political and economic out-

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<sup>2</sup> Devising and implementing schemes for compensation turns out to be quite difficult from a theoretical perspective. As Dewatripont and Roland (1992) and Fernandez and Rodrik (1991) show, time-inconsistency problems and the unobservability of individual endowments casts a strong doubt on the political feasibility of compensation.

comes by examining the interaction of economic factors on the one hand and political incentives and constraints on the other. As such, this type of analysis is explicitly positive in nature and tries to account for deviations from normative, first-best solutions. As the author of one of the authoritative textbooks on modern political economy analysis put it:

Political economy thus asks the question how political constraints may explain the choice of policies and thus economic outcomes that differ from optimal policies, and the outcomes those policies would imply (Drazen (2000): 7).

Whatever the precise definition, the core idea is that political outcomes are the result of two factors: preferences of the actors involved and the political and economic institutions through which these preferences are aggregated. Modeling the impact of population aging on pension systems and their reform thus requires a profound understanding of voters' preferences and of the political environment in which such an endeavor is undertaken. This holds true for any type of pension reform, regardless of whether the reform is parametric (i.e. changes in the contribution rate, benefit levels or eligibility rules) or non-parametric (partial or full transitions to prefunded systems). Any reform of a PAYG system of old-age provision has strong redistributive implications, there is no Pareto improvement possible, as has been argued before by Breyer (1990) and Sinn (2000).

## 1.2 So far, not so good

Quite a number of countries have implemented pension reforms during the last three decades. The first large-scale reform to receive international attention was clearly the Chilean Reform of 1981, which introduced a full transition from a PAYG to a prefunded system (see Diamond (1993); Mesa and Mesa-Lago (2006)). Interestingly, it was not a democratic government but the autocratic regime of General Pinochet that was able to implement such a major reform. This precedent was followed by reforms in other Latin American countries in the 1990s such as, among others, Bolivia, Argentina, Mexico and Peru. Other emerging market economies like some of the transition countries of Central and Eastern Europe also implemented sizeable reforms in the 1990s, the most prominent cases being Hungary, Latvia and Poland (see Müller (2001); Fox and Palmer (1999)). But broad pension reforms have also been introduced in a number of Western European countries. Especially Sweden, Italy and Germany are among the

most recent examples to introduce major changes (see Galasso (2006) and Immergut et al. (2007)).

Yet despite the common demographic pressures, we observe a strong variation across countries and time in the occurrence and size of pension reforms that cannot be explained by aging alone. Unfortunately, only few quantitative studies on the determinants of pension system size and pension reform exist, but these few do not find the age structure of the population to be the only important factor (see Breyer and Craig (1997); James and Brooks (2001); Brooks and Weaver (2005); Mulligan et al. (2002)). A plethora of further possible explanations has been offered which comes as no surprise given the importance of political factors in redistributive reforms. However, the analysis of the politics behind changes of systems of old-age provision has fallen short so far, even though it had spawned great scholarly interest in the past decade. Entering the search term “pension reform” in the Social Science Citation Index returns a whopping 415 entries (as of January 2013) - and these are articles in peer-reviewed journals only. This academic attention has not yet led to a coherent body of theoretical and empirical insights though, but rather to a patchwork of hypotheses. This is not due to a lack of empirical showcases, as shown above, but rather due to the intricate political nature of redistributive issues. Discussing a recently published book on pension politics in Europe, a reviewer came to the sobering conclusion:

Judged by this volume, political scientists are still some way off from having a theory and analysis of pension politics and reform (...) (Toft (2008): 125).

This criticism could also be leveled to some extent against the economic literature. However, the economic approach of analyzing pension systems in the framework of overlapping generations models (OLG, in short) proved to be the first fruitful step in adding political structure to the analysis of pension systems. Starting with the seminal contribution of Browning (1975), these studies have explicitly modeled the pension system as the outcome of a majority voting process. Later on, repeated voting (e.g. Sjöblom (1985), Boldrin and Rustichini (2000)) and super-majority voting rules have been incorporated (e.g. Azariadis and Galasso (2002)). The role of the institutions of representative government and electoral competition have been less of a concern so far. This stands in contrast to the study of other policy fields. In the area of fiscal policy, for instance, which also provides a mechanism of intergenerational resource transfer via the accumulation of public debt, the influence of electoral institutions (see Austen-Smith (2000); Lizzeri and Persico (2001)), the dynamics of po-

litical competition (see Persson and Tabellini (1999, 2003)) and the impact of legislative bargaining (see Ferejohn and Krehbiel (1987); Persson et al. (2000); Grossman and Helpman (2008)) have been more extensively analyzed and empirically tested. These political models have contributed quite significantly to our understanding of fiscal policy and the evolution of deficits and debts. Yet, so far their insights have not been fully extended to the related field of pension policy and reform.

With respect to the political science literature, most of it has taken a different tack on pension reforms. Theoretical work has rather relied on broader narratives about the development of the welfare state as a whole. The pension system has been thus considered as a part of a certain welfare regime (see Esping-Andersen (1990) for the seminal contribution). Explanations have been based on the consequences of industrialization (see Wilensky (1975)), the political clout of left-wing parties and trade unions (see Huber and Stephens (2001)), the influence of the fragmentation of the political system by veto players (see Bonoli (2000)) or, with regard to reforms, the blame avoidance strategies by policy makers (see Myles and Pierson (2001)). However, a coherent and rigorous theoretical framework has not been developed so far. Most of the empirical literature, on the other hand, looks at case studies to shed light on the dynamics of pension reform (see for instance the volume by Immergut et al. (2007)). The lessons that can be drawn from these kind of studies are limited though. As Eichen-  
green has put it nicely in a different context:

Case studies are useful for illustrating the practical applicability of abstract reasoning, but they are crude instruments for discriminating among alternative hypotheses and rating their relative explanatory power. (...) [T]he limited number of cases any one scholar has the energy to master offers limited degrees of freedom for systematic tests (Eichengreen (1998): 1012).

In addition, what is mostly missing in the political science literature is a formal analysis and derivation of political preferences for pension reform amongst voters. There is also a lack of analysis of how these preferences are shaped by demographic developments, economic incentives and the political environment. It is therefore safe to say that our current knowledge about the political dynamics of pension system reform is sketchy at best.

## 1.3 Things to come

Building on the current state of research on pension systems and their reform, the following work sets out to, first, review existing political economy models and to show that pension policy is foremost a political problem; second, to prove that any pension reform is by and large a redistributional policy shift; and third, most importantly, to develop a political economy model of pension reform that explicitly derives the policy preferences of different age groups. The aim is to improve our understanding of the politics of pension reform in aging societies by explicitly taking into account some of the underlying political incentives generated by the size of the pension system and the political environment. Due to the difficulty of modeling a complete political decision-making process, especially with regard to redistributional issues, this dissertation will focus on the pre-electoral dimension of politics. The ultimate goal is to attempt a model-based explanation of whether and how voter preferences, aging dynamics and their interaction with a country's existing pension system shape the electoral prospect for pension reform. Given the inherent difficulty of such an endeavor, no additional attempt is made to develop a general model of the *whole* political process, which would entail an explanation of preelectoral politics and the process of government formation, legislative bargaining and policy formation. For the same reason, the economic environment of the model will be restricted to a partial equilibrium nature. The focus is on the political preferences involved and not on maximizing the number of economic parameters that can be endogenously derived.

Focusing on political preferences, aging processes and the electoral institutional environment is a natural starting point to discuss pension reforms and their feasibility. Since the seminal work of Downs (1957) the burgeoning fields of public choice and political economy have emphasized how political decisions are not primarily driven by economic efficiency concerns but rather by policy makers' concerns for re-election. Knowledge of voters' preferences, possible voting coalitions and the incentives provided by the political environment are therefore key to understand the dynamics of reform politics.

However, before looking into political economy models of pension systems, the stage needs to be set by examining more closely demographic trends and their economic repercussions in the western industrialized world, which will be the focus of this dissertation. For this end, Chapter 2 will explore existing projections of population growth and aging. These projections have been widely used to estimate medium to long-

term trends in productivity, economic growth, labor markets, fiscal policy and benefit and contribution levels of existing pension arrangements. These preliminaries will provide a taste for the problem at hand. It will become clear why pension reform is an pressing issue in most western countries, and why existing systems of old age provision are under pressure to change. The consequences of aging and their implications for the sustainability of pension systems will greatly affect the economic welfare of voters. Thus, pension politics is widely considered a highly salient issues with great electoral relevance.

Chapter 3 then reviews the existing political economy literature on the existence and size of pension systems. The basic set up for the review will be a simple OLG framework with a uniform notation to facilitate comparisons and the understanding of the different approaches. It will be shown that, for the most part, the literature models the political process as a direct-democratic process. Policy is determined simply by the median voter of a certain age or by some influential group that cannot be overruled. In contrast, a much smaller number of models add more political structure and models pension decision making in a representative democracy setting. The chapter elucidates the strengths and deficiencies of these political economy explanations and highlights what the model proposed in this dissertation will add to the discussion.

Having laid out the inherently political nature of pension policy, I will next turn to the issue of reform in Chapter 4. Although public policy discussions heavily emphasize the differences between PAYG and prefunded systems as well as the pros and cons of a transition from the former to the latter, it will be shown that the exact type of pension reform is of no importance really. The chapter will make clear why pension reform, whether parametric or non-parametric, is a redistributational issue. Hence, when developing a model of (redistributive) pension reform, we do not need to bother about whether we mean one type of reform or another. The underlying political incentives should be the same regardless of whether a switch to funding is considered or a parametric change of the public PAYG scheme.

Chapter 5 then proceeds to developing a simple model for deriving voters' pension policy preferences. Since this approach explicitly considers the impact of preferences for non-pension policies, pension policy is examined not in isolation but in view of the fiscal trade-offs made with respect to other public policy goods. To this end, a simple three generation OLG model is employed, which allows for an easy derivation of economic and political preferences of the different age groups. The analysis of the model



suggests that preferences for a generous pension system (not surprisingly) increase with age but also depend on the size of the existing system and the population growth rate. From these very basic results, it is then possible to formulate scenarios under which changes to a pension system are more or less likely. In particular, I will analyze the feasibility and direction of pension reform under different electoral institutions, comparing reform outcomes in a direct democracy on the one hand, with outcomes in a representative democracy on the other hand. It will be possible to explicitly distinguish and compare reform scenarios in majoritarian and proportional electoral systems. I will show that in certain scenarios and conditions, pension reform may be harder to achieve in a majoritarian system than under proportional representation.

The insights of the model are tentatively tested in Chapter 6. While it won't be possible to empirically check the model's implications with respect to the actual feasibility and direction of pension reforms, it is possible to test whether reported political preferences actually do conform with the model's predictions. Using cross-national survey data of 21 countries provided by the International Social Survey Programme, logit and ordered logit estimations lend some statistical support for the hypotheses derived from the model.

Chapter 7 summarizes premises, hypotheses and results of this dissertation. The most important insights are then contextualized with respect to the current literature. Finally, the dissertation closes with some thoughts on future avenues of research and future developments of pension systems in industrialized countries.

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