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**ECONOMIC-FINANCIAL LITERACY AND (SUSTAINABLE)
PENSION REFORMS: WHY THE FORMER IS A KEY
INGREDIENT FOR THE LATTER**

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Summary

Financial literacy has important implications for economic reforms. Reforms are meant to change people's behavior and their effectiveness crucially depends on the ability of citizens to recognize and generally approve their necessity, their general design, and their "sense of direction." Without basic understanding by citizens, reforms risk having little or no effect or even being reversed. Informed judgment about economic reforms requires information and numeracy as well as literacy. This is particularly true of pension reforms because of their profound impact on people's life plans. The 2011 Italian pension reform is a case in point.

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1. The role of reforms in today's market-oriented societies

The overall worsening of government finances in advanced countries during the last two-three decades, and emergency situations stemming from the financial/economic crisis that started in 2008 have prompted international institutions such as the OECD, the IMF, and the World Bank to insistently pressure developed countries to undertake wide-ranging reforms of their welfare systems, labor markets, and public sector. In spite of urgency, in a democracy, reforms must comply with the

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fundamental principle that governments are ultimately accountable to their citizens. While citizens may not be called upon to approve reforms directly through referendums, they are nonetheless the indirect drivers of the political process, since politicians are aware that their electoral prospects depend on voters' evaluations of their track record and proposed agenda. This evaluation looms large in economic policy in general and in economic reforms in particular.

In a market economy, policy makers set the "rules of the game" that establish the framework within which market forces operate. Economic reforms modify outdated, ineffective, and misapplied rules. They do so mainly by altering individuals' incentives and ultimately their attitudes, decisions, and actions. Such reforms have thus a great impact on people's lives and, as an investment, entail immediate and easily computable costs against uncertain future benefits.

It is the duty of political parties - especially those that receive majority support, express the government's view, or see themselves as a viable alternative to the government of the day - to explain to citizens why old rules must be modified and along what lines; to illustrate the mechanics of possible reforms; to receive feedback; and to adjust and modify the original project taking this feedback into account. Political parties, however, tend to look at social problems through ideological lenses and to underestimate their more "technical" aspects and constraints. It is thus the task of experts to help politicians design reforms by offering qualified/scientific advice, while leaving to them the framing of those reforms into a set of values (or "ideology") that the electorate can recognize, give credit to, and possibly help to correct in order to take account of the complications of everyday life. An economic reform, therefore, is usually a mix of political and technical elements, the former in the forefront of communication and the latter mostly backstage.

Sometimes, however, this scheme weakens or simply breaks up. This is more frequent when exceptionally severe reforms are necessary in an emergency (as in the case of Greece in the financial crisis that started in 2008 and in Italy in November 2011), but political parties lack the stamina to introduce them for fear of losing the electorate's favor. It is no wonder that, in times of financial crisis, reforms are wildly unpopular since they imply belt tightening and sorely resented changes in most people's way of life.

In these situations, experts tend to play a major role. This role can be *indirect* (as, e.g., when countries receive international support for recovery programs, on condition that they introduce very stringent austerity measures¹) or *direct*, when experts are asked to take up key government positions or even to form a "technocratic" government. There is hardly any other justification for a technocratic government in a democracy than as an antidote to the weakness and electoral fear of

¹ The interventions of the troika—the European Union (EU), European Central Bank (ECB) and IMF—in Greece during the euro zone crisis in 2011–2013 are a prominent recent example.

the most representative political parties. Indeed, such a government is normally appointed precisely to carry out unpopular reforms in turbulent times, when technical constraints become dominant with respect to political preferences, that is, when “sacrifices” can no longer be put off.

Such a government may find it very difficult to convey a positive message about reforms, because technocrats do not normally rely on ideologies to communicate and normally communicate with each other rather than with the public. It is then very difficult for them to convincingly explain the future benefits that the reform is expected to bring about in exchange for current sacrifices. This was the case of Italy in November 2011, when, under dramatic financial circumstances, a government led by the former European Commissioner Mario Monti was appointed precisely to honor the previous government’s international pledge to introduce reforms (although lacking the political strength or the political willingness to do so). Prominent among these were the pension reforms (analyzed in Section 6) and the labor market reforms.

Under circumstances such as these, citizens’ support for reforms crucially depends on how much they know about these and how well they can assess their overall long-run effects.² If citizens and technocrats do not share a basic conceptual framework, citizens might not be able to work out the future positive consequences of structural reforms and will thus be more prone to oppose and refuse change. *In the absence of a recognized ideological message and sufficient political stability, financial literacy (or, as I will argue, economic-financial literacy) may therefore be crucial to the success of economic reforms.*

2. Financial literacy: An essential instrument for sensible individual choices

Lack of financial literacy is typically associated with poor personal finance decisions, such as inadequate savings and participation in pension funds, excessive personal debt, bad or whimsical investment choices, and gullibility (Lusardi and Mitchell, 2008, 2011, 2014). The cost of such behavior has increased as personal financial responsibilities have expanded, due to the retrenchment of the welfare state, on the one hand, and to the greater sophistication of financial/insurance markets, where ordinary citizens can—and sometimes, indeed, must—be players, on the other.

Financial literacy has been extensively measured through surveys exploring three key concepts of basic numeracy and understanding: (i) interest rates, including

² As Mario Draghi publicly recognized at the European Central Bank meeting in Naples on October 1, 2014,

The demonstrations announced for tomorrow, close to where we will meet, remind us all of the difficulties we are facing to overcome the many facets of this crisis, which is being felt particularly acutely in some regions of Europe. And it underlines why explaining our policies to the citizens of the euro area remains so important.

compound interest, (ii) inflation, and (iii) risk diversification (Lusardi and Mitchell 2011). The analysis of the results has led to a number of interesting findings, which can be summarized as follows.

- i. Financial illiteracy is widespread in almost all countries, regardless of their economic development stage; knowledge of inflation is correlated to individuals' experiences of inflation; and risk diversification is the most difficult concept.
- ii. Financial knowledge generally has a hump-shaped age profile over the life cycle (Lusardi and Mitchell, 2011); it is highest among the 45- to 55-year-old groups and lower at younger and older ages.
- iii. Gender differences are significant and pervasive, with women in a comparatively worse position than men are and thus more likely to make—or to suffer the consequences of—wrong/myopic/imprudent choices. It is implausible that biological diversity has to do with these differences; it is much more likely that the traditional division of roles both within the family and in society, widespread stereotypes, and a predominantly "masculine" financial language are responsible for them (Sunden and Surette, 1998; Lusardi and Mitchell, 2008; Bertocchi, Brunetti, and Torricelli, 2012; Bücher-Koenen, Lusardi, Alessie, and van Rooij, 2012; Boggio, Fornero, Prast, and Sanders, 2014);
- iv. A strong positive correlation between financial and economic literacy and human capital indicators has been observed, despite substantial heterogeneity in financial and economic literacy across countries (Jappelli, 2010).
- v. An inverse correlation between financial literacy and the generosity of social security systems has also been detected, in the sense that less financially literate individuals are more likely to be found in countries with more generous pension rules (Jappelli and Padula, 2013).
- vi. Finally, financial knowledge has been identified as a key determinant of wealth distribution, accounting from 30 to 40 per cent of wealth inequality in the US (Lusardi, Michaud and Mitchell 2014).

The negative consequences of financial illiteracy on people's welfare, particularly after the damages of the financial crisis, have determined a growing concern among governments, financial institutions, and regulators (OECD, 2013a). The 2013 G20 Summit (OECD, 2013b) has recognized financial literacy as a key element in the achievement of greater financial inclusion and various governments have organized and implemented financial education programs, particularly in schools but also for adult groups supposedly more at risk. Although the results of these programs are still scanty and do not allow firm conclusions, some studies confirm positive effects. Cole, Paulson, and Shastry (2014) show that an exogenous increase in education increases

individuals' savings and participation in financial markets while reducing the probability of personal bankruptcy.

It therefore stands to reason that, in our societies, financial literacy should be crucial not only in the personal but also in the public sphere, facilitating the introduction of better economic policies through democratic processes and laying the foundations for the political sustainability and effectiveness of reforms. The public role of financial literacy has, however, received much less attention in research than its role in individual decision making, possibly because it requires a broader definition of financial literacy than was common in the initial research on the subject, focused on individual money making and wealth management. These aspects of literacy should not be considered more important than the collective basic understanding of financial and economic mechanisms. They require some basic notions of how the economy works as well basic notions of how the financial world works. We should thus talk of economic–financial literacy (EFL) rather than of mere financial literacy.

3. EFL: A new frontier for responsible citizenship and more effective reforms

Let us consider the OECD definition of financial literacy (OECD, 2013b):

Financial literacy is knowledge and understanding of financial concepts and risks, and the skills, motivation and confidence to apply such knowledge and understanding in order to make effective decisions across a range of financial contexts, to improve the financial well-being of individuals and society, and to enable participation in economic life (my emphasis).³

If one interprets the last sentence not merely from an individual point of view (where making a purchase or deciding to save part of one's income are indeed examples of "participation in economic life") but also as a contribution to democracy and policy making in market-oriented economies, it is easy to conclude that citizens are called upon to evaluate and endorse public policy in various economic contexts.

In a pioneering paper, George Stigler advocated not just financial but *economic literacy* and wrote (1970, pp. 78–79) the following:

Why should people be economically literate, rather than musically literate, or historically literate? If we are to give economics some special position,

³ The role of financial literacy in sustaining reform processes has been explicitly stressed by OECD Secretary-General Angel Gurría, who writes (OECD, 2013b, p. 5), "Financial education is also critical to restore trust and confidence in the financial system, promote financial stability and provide the necessary public backing to financial reforms."

and ask that most people learn at least a modicum of economics, it must accordingly fall into one of two classes of knowledge: 1) as a means of communication among people, incorporating a basic vocabulary or logic that is so frequently encountered that the knowledge should be possessed by everyone; 2) as a type of knowledge frequently needed and yet not susceptible to economical purchase from experts.... Economic logic does not tell us what to do, but it teaches us to look for the non-obvious costs and benefits of various policies.

It therefore stands to reason that EFL should be crucial to the democratic transformation processes of our societies. However, in spite of swift intensification of research on financial literacy and education, little has been done up to now to include it in existing political–economic models that study why governments often fail to deliver and implement economic reforms, even when both experts and politicians agree that these would improve welfare. Several explanations of this failure have been put forward by such models. In most cases, they involve distributional conflicts focused on the preservation of the status quo (Alesina and Drazen, 1991). Interest groups hurt by the reform process could succeed in blocking reforms (Grossman and Helpman, 2001). Lack of knowledge about the distribution of costs and benefits of a reform could spoil citizens’ chances to benefit from them if they are risk averse (Fernandez and Rodrik, 1991).

While distributional tensions certainly play a key role, citizens’ awareness of what is involved in a reform can be an equally important determinant of its viability. Bonfiglioli and Gancia (2013) move a step in that direction. They assume that the short-run costs of reforms take the form of a transitory decrease in output. This causes a decline in political support for the incumbent politicians, along the lines of the conventional wisdom expressed by Jean-Claude Juncker’s aphorism, “We all know what to do, but we don’t know how to get re-elected once we have done it.”⁴ The authors also argue that politicians tend to introduce politically costly reforms in times of exceptional economic volatility, when voters are unsure of the impact of government policy on economic outcomes, so that the short-run costs of the reform translate less precisely into a decline in the incumbents’ chances of re-election.

EFL could become a new, more transparent alternative to concealing from citizens the unpleasant consequences of reforms, a potentially key element in the relationship between citizens and politicians. Since such literacy is primarily a result of education, government policy could thus indirectly induce long-run support for virtuous reforms.

EFL is not, per se, a sufficient condition for the success of reforms; illiteracy can, conversely, thwart their effectiveness by exerting sufficient pressure on politicians to

⁴ The Economist (2007), The quest for prosperity, March 15. Quoted in Buti et al. (2008).

either establish an excessively long phase-in period or undo reforms approved by a previous government. This is because reforms are not “deus ex machina” problem solvers but, rather, “social drivers”, meant to change people’s plans, behavior, and attitudes, requiring acceptance and “care” by the (majority of the) people. The ordinary citizen must be able to use the basic tools for the evaluation of reform-related costs and benefits, now and in the future, for him/herself and/or his/her family. This is particularly true of reforms intended to alter individuals’ life cycle, such as those that redesign the pension system and the labor market. EFL can help view the reform as an investment project involving immediate costs in exchange for likely future benefits. Of course, like all social investments, reforms have a public good component: EFL will thus not be enough to convince complete egoists. Complete egoists, however, are hopefully a minority and both theoretical and empirical research confirms a certain commitment to the common good in individuals’ attitudes (Kangas, 1997; Eskander, 1998).

4. Can EFL overcome the “unpleasantness” of a pension reform?

To make the argument more specific, let us consider *pension reform*, often advocated in Europe as a key remedy to the public financial distress caused by population aging.

Why is a reform needed? What is it supposed to achieve? The answers to these questions are more or less clear and uncontroversial to experts (see Section 5). However, judging from public opinion polls as well as from researchers’ experiments, this is in sharp contrast to the citizens’ uncertain and contradictory views of pension reforms.⁵

⁵ Boeri, Boersch-Supan, and Tabellini (2002) analyzed public opinion on pension reforms in Italy and Germany. The questionnaires asked questions such as: are citizens aware of the unsustainability of the pension systems and informed of its costs? Are reforms opposed by a majority or by a powerful minority? What reform options seem politically more feasible and why? What groups of citizens are more likely to favor reforms? Do citizens’ opinions reflect their economic self-interest, as presumed by the literature on political economics? The authors found that the majority of respondents were aware of the unsustainability of the system but had only a vague idea of the real costs of the pay-as-you-go (PayGo) system. Those favoring reforms rarely support more than one reform option (later retirement in Italy as opposed to lower pensions in Germany). Quite contradictorily, many of those aware of the system’s unsustainability were against further reform. Favoring one policy option over another appeared to be determined by short-term self-interest and by one’s normative view about the role of the state. See also Boeri and Tabellini (2012), who find “a huge misinformation about the true costs of public pensions.” Janky and Gàl (2007) analyzed attitudes toward the role of funded pillars, retirement age, the labor market participation of older workers, gender equality, immigration, and preferences in intra/intergenerational redistribution in the EU 15 countries. They found generalized opposition—although of varying intensity—to pension reforms. Rejection of specific policy options depended on income, age, and labor market position but was uncorrelated to being aware of the unsustainability of the system. Funded pillars were not very popular, except as a mandatory complement to the public pillar. Only 23% of respondents were ready to accept an increase in retirement age and opposition was

To understand why, a rapid overview of pension systems' main characteristics and actual inadequacies can help. In most countries (and in practically the whole of Europe), the social security system is still by far the most important pension provider; indeed, the standard of living of the elderly still depends largely or exclusively on it (Fornero, Lusardi, and Monticone, 2013). The system is normally financed on a PayGo basis, with revenues (contributions/payroll taxes on wages and other labor incomes) immediately used, year by year, to finance pension expenditure, with little or no accumulation of funds and often with a top-up from the public budget to cover the deficit.⁶

This apparent “tax and transfer” feature tends to conceal the underlying “intergenerational contract” that supports the scheme: The young/active population pays for the current elderly/retirees, holding the belief that the same stipulation will apply when they will be retired. The system typically combines with a defined benefit (DB) type of formula, which calculates pensions as a predetermined proportion of (an average of) the final salary/labor income. The formula is normally quite generous in terms of replacement ratios, rates of returns, and indexation but this occurs at the price of weakening the connection, at the individual level, between contributions paid in and benefits received, thus further obscuring the insurance/saving properties of the program and contributing to an interpretation of pensions in terms of “acquired rights” (with little consideration of “who pays the price” for them).

PayGo financing thus implicitly encourages politicians to be rather generous toward more mature and older workers at the expense of younger and future generations, while population aging reinforces the mechanism by increasing the age of the median voter, who has a decisive weight in determining policies. In turn, the DB formula not only tends to favor high-salary/labor income recipients but also can easily be tailored, through political lobbying, to meet the expectations of the most influential pressure groups, such as officials, public employees, and managers (not to mention the politicians themselves). In practice, more often than not, the combination of PayGo and DB encourages rather shortsighted political choices that favor the accumulation of public liabilities (the so-called “implicit debt”; Holzmann, Palacios, and Zviniene, 2004), inefficiency (i.e., encouragement to early retirement, irrespective of longer life expectancy), and unfairness (a “perverse redistribution” from poorer to richer workers).

A contradiction has thus emerged: while economists have long interpreted the PayGo system as an intergenerational insurance contract—endowed, when properly

greater in countries with a more generous system. Framing effects resulted in significant impact on attitudes to policy options. Overall, this research confirms that opposition to reforms derives from a poor understanding of the characteristics of welfare institutions, such as the functioning of the PAYG system. See also Butler and Marechal (2007) and Scheubel, Schunk, and Winter (2010).

⁶ When, as frequently happens, contributions are not enough to cover pensions payments and increasing the payroll tax rate is hardly feasible for competitiveness reasons.

designed, with efficiency properties (Samuelson, 1958; Lindbeck and Persson, 2003; Diamond, 2004; Barr and Diamond, 2008)—its political economy characteristics are such that politicians have, in practice, systematically favored older generations and created, also through fragmentation of the system in various schemes, an unjustified differentiation of rules, that has reduced its overall transparency.

5. Convergence in pension reforms: The result of financial constraints rather than political farsightedness?

These elements of financial unsustainability reinforce each other, exacerbating the inability of badly designed schemes to effectively respond to the challenges posed by the demographic transition and the economic slowdown. When instability becomes manifest, an urgent need for reforms arises in order to consolidate public finances. Tradeoffs become more severe and significant increases in retirement ages and/or cuts in pension benefits, possibly through a change in the pension formula, become unavoidable.

From the *technical* point of view, there has been a growing shift, both among researchers and policy makers, from a redistributive to an insurance view of welfare programs, based on an analysis of individual and macroeconomic risks in order to better respond to their transformation and distribution across ages, generations, and genders. Requirements for a “good” pension system (the “optimal” scheme being practically unfeasible, even if theoretically possible) have molded policy and determined, at least partially, the course of reforms. These requirements can be summarized as follows.

a) Better risk diversification supports a *mixed system*, partly public and PayGo and partly private and funded (pension funds). In the long standing full funding vs. PayGo controversy, the “mixed system” has been advocated, particularly by the World Bank, as a practical way to reconcile the stochastic dominance of financial market returns over the GDP (or earnings) rates of growth, on the one hand, with the costs of a shift towards greater funding, on the other. First, past returns do not necessarily forecast future returns. Diamond (1999) lists a number of convincing reasons why the future equity premium could be declining, as compared with the past. Second, higher returns from equities are a compensation for their higher risk. Third, for most countries, the current problem is not to decide whether to create ex nihilo a funded or a PAYG scheme, but whether to encourage the birth, or the growth, of a funded scheme side by side with an already existing, and developed, PAYG system requiring reform.

Even a partial transition from PayGo to funding can only be a very gradual one, since it raises important funding problems that can jeopardize the reform. Namely: young workers who are told that they will receive a lower pension for the same payroll tax rate, and invited to contribute to a funded pillar as an offsetting measure, are being asked to save more for the same replacement ratio. If, on the other hand, contributions

to the funded pillar are compensated by a reduction of the payroll tax rate, obligations to present and prospective retirees must be partly covered by other means (i.e. from general taxation). Thus an awkward political decision has to be taken as to how to share the implied cost between present workers, present and prospective retirees, and taxpayers.

b) One reason to maintain the PayGo system is that it allows a compact between generations that is not attainable by market mechanisms. This compact however must not be implemented to the disadvantage of future generations. It is thus imperative to redress badly designed systems. This can be done through “notional funding,” a method under which workers (including the self-employed) have their own pension account, where their contributions are reported, summed up, and notionally rewarded at a rate of return that, for the system to be balanced, must be (approximately) equal to the gross domestic product (GDP) or wage bill growth rate. This system makes it possible to tailor pension benefits to individual workers’ contributions without actually having to capitalize and invest the sums paid in. Better correlation at the individual level between contributions and benefits and between benefits and the retirement age is obtained through the defined contribution (DC) type of formula. The application of the actuarial principles embedded in the formula enhances the savings role of a pension scheme, increases its transparency; avoids the “implicit taxation” of the pension wealth that occurs with the DB formula when retirement is postponed; favors the pension portability required by a more dynamic labor market, and makes political manipulation of the system more difficult. Combining notional funding with the DC formula produces the notional defined contribution (NDC) system that Sweden originally adopted, later followed by many countries, including Italy (Holzmann, Palmer and Robalino, 2012).

c) The automatic adjustment of retirement ages to longevity helps avoid the social tensions that usually accompany parametric changes of the system, provided the quality of life of the extra years is good and the increase in longevity is somehow split between an increase in working life and an increase in expected pensionable years rather than assigned solely to an increase in working life.

d) A better integration between the labor market and the pension system is a crucial requirement for both the DC formula itself and the new features and challenges of the labor market.⁷

The DC formula exposes the individual to much greater retirement risks and thus requires that all risks over the individual’s entire life cycle (education, active life,

⁷ As Franco Modigliani’s life cycle hypothesis taught us long ago, work and retirement are two matching segments of our life and it does not make sense to treat them separately in analysis or policy making. What happens in the latter depends very much on what takes place in the former. It is no wonder, then, that labor market reforms have often been advocated by the same international institutions demanding pension reforms.

retirement) be considered in a unified framework. In the labor market, three demographic segments are particularly at risk of not being able to accumulate an adequate pension through their contributions: the young, women, and older workers.

Nowadays, younger generations experience much greater employment/earning risks than their elders: Unemployment spells and income discontinuity are taking the place of the uninterrupted and ever-increasing earning profiles that were the norm for their fathers. Solutions have gone in the direction of “flexicurity,” a formula combining *job* flexibility with higher *work* probability or higher security at the family level (one full-time and one part-time job per family). Actual solutions, however, have often resulted in too much flexibility (with frequent out-of-job periods) and too little security.

Women (of all ages) also are at risk. Women’s changing role and position in society as well as increased participation in the labor market have increased women’s direct responsibility for their own income security, both in their active life and in retirement, but pension systems do not yet fully recognize this. Consequently, women are still up against a difficult choice between greater equality of opportunities (same retirement age as men and less career discrimination) and the continuation of ex post compensation (lower retirement ages and relatively generous survivor’s benefits) for unequal treatment in the labor market and in public life, as well as an unequal share of family duties. Finally, older workers are at risk of experiencing a jobless period before retirement and their prospects of being hired worsen with age.

These changes in the labor market and in society require some redistribution to be maintained and made transparent in an NDC system. In particular, the system should allow for coverage through the general taxation of lost contributions for out-of-work periods, for unemployment, and for care activities.

a) The uniformity of rules avoids fragmentation of the system and the formation of privileges, while allowing, as stated above, explicit tax-financed exceptions, directed at those workers who could not reach an acceptable retirement income during their working lives.

b) Finally, although the system is necessarily mandatory, a more balanced combination of obligations, choices, and responsibilities would increase citizens’ awareness of the features, options, and costs of the programs and allow them to better clarify the still widespread notion of acquired rights. In particular, gradual retirement and more flexible retirement ages should be part of a good pension system.

Reforms have indeed been introduced, in the last couples of decades, inside and outside Europe. Countries have relied on differently motivated governments and followed diverse reform paths, with varying speeds and sociopolitical obstacles. A convergence—dictated more by financial constraints than by strategic political choice—has emerged. Pension promises everywhere have been downsized and often redesigned. Retirement ages have been raised and in certain cases made more flexible. Replacement ratios have been reduced and there has been a shift from the indexation of benefits to wages to the indexation of benefits to prices. The link at the individual

level between benefits and contributions has been strengthened; actuarial corrections have been introduced through variations of benefits in line with expected longevity at retirement and the indexation of retirement ages to longevity. Access conditions to early retirement and disability schemes have been tightened; gender differences have been reduced; transparency has been improved; pre-funding, through participation in (mainly occupational) pension funds, has been fiscally encouraged; pension portability among EU countries has been enhanced.

Are these developments—in many cases still in progress—enough to guarantee the financial sustainability and adequacy of the system as well as the political sustainability of reforms? While, from a technical point of view, the answer to the former question can be a tentative yes, more doubts seem justified for the latter, which requires, among other things, a deep cultural change.

While easily understandable to specialists, these technical requirements are hard for public opinion to grasp. Expressions such as *financial emergency require austerity measures* do not help, since they sound obscure and clumsy to a layman. They risk exasperating public opinion and reinforcing the conviction that what is proposed is simply an unacceptable retrenchment of the welfare system, a reduction of acquired rights, which workers, often erroneously, believe “they paid for.” This conviction tends, however, to dominate the public debate and to conceal the medium- to long-term goal.

In the case of pension reforms, this goal mainly consists of the *rebalancing of financial and economic relationships between generations*. This aspect, if properly emphasized, could make the same reform less painful for citizens, clearly showing the reward for current sacrifices. It is, however, often ignored by the media—whose technical ignorance is often matched by a desire to overdramatize—so that there is hardly room anywhere—except in technical discussions—for unbiased and unemotional evaluation. Yet, if reforms are not understood, they cannot be shared; if they are not shared, any attempt to nullify them as soon as possible will find sympathetic ears in all political parties (See the Appendix for examples of reform reversals). On the contrary, when people understand that their pension “entitlements” were, at least partly, built on debt to be honored by future generations—that is, by their own children and grandchildren—they can become less hostile to pension restructuring.

6. Lessons from the 2011 Italian pension reform

Italy started its pension “homework” in the early 1990s, with 1992 being a watershed year: Before 1992, all changes to the pension system had been in the direction of increased generosity. Since the pension benefits were already overly

generous, extremely favorable conditions were applied to retirement ages, pension guarantees, and benefit indexation.⁸

In 1992, a serious monetary crisis and the exit from the European Monetary System forced the government to rein in public expenditure and the pension deficit was an obvious target. An NDC Swedish-style system was adopted in 1995, but social resistance forced an exasperatingly slow phasing in of the new rules, transferring the entire adjustment burden to the young and future generations.⁹ This very long transition coupled with swift population aging reduced the effect on public finances as well as the credibility of the reform and proved to be inconsistent with the sovereign debt crisis that hit the euro area—particularly Italy—in summer/autumn of 2011.¹⁰

When the technocratic government took office in November 2011, public finances were near collapse and politics were at a stalemate. Financial operators were turning their backs on Italian sovereign debt auctions and the few who took part were demanding exaggerated interest rates, so that interest paid by Italy on its new 10-year bonds exceeded interest paid by Germany on similar-type bonds by a spread of 500 basis points. This was three times the same spread as in October 2014. Italy had (and still has), on average, to refinance public debt amounting to €1 billion a day of its huge public debt and its well-tested system for doing so was under massive attack. It is not just rhetoric to say that financial breakdown was around the corner. The possibility that interest might not be paid and that expiring bonds might not be reimbursed was very real; pensions and civil service salaries might have been at risk, while central and local administrations were already unable to pay suppliers, whose claims exceeded €70 billion. The plea “FATE PRESTO!” (*act immediately!*) that the Italian economic daily *Il Sole 24Ore* splashed on its front page in capital letters on November 16 of that year reflected the people’s gloomy mood (Fornero, 2013).

The financial crisis, however, was only one side of the coin. The other was a slow industrial decline that had afflicted the country for about 20 years, reducing

⁸ The Italian DB formula granted an accrual rate of 2 percent of the “last” salary for each year of seniority, which translated into a replacement ratio of 70–80 percent for the typical 35–40 years of seniority. The basis for the pension calculation for the DB fraction of the pension benefit is now an average of the last 10 years, but it used to be the very last salary for public employees, with an implicit incentive to ask for and obtain a promotion/salary increase in the last month of work.

⁹ The new formula was applied entirely only to new entrants and partially (i.e., on a pro rata basis) to workers with less than 18 years of seniority, while elder workers with 18 or more years of seniority were excluded.

¹⁰ According to the OECD (2009), Italy stood out, a couple of years before the reform, for i) a record high pension expenditure–GDP ratio (near 15 percent) and its rate of increase in the decade 1995–2005, ii) an excessively long transition period for the implementation of reforms, and iii) the burden of adjustments essentially left to young and future generations. The same opinion was given in the IMF (2011) Country Report, which said that, despite the reforms, the Italian pension system remained generous and generationally inequitable, given the slow transition to the notional DC scheme, which transferred a large burden of the reform to future generations.

Europe's once most buoyant economy to a shadow of its former self. Italy cut its research and development expenditures and, got out of high-productivity sectors such as electronics, chemicals, and drugs, concentrating on labor-intensive fashion-oriented "made in Italy" products, where it encountered increasingly stiff competition from developing countries.

In my new role as Minister of Labor, I was asked to prepare a restructuring of the pension system harsh enough to convince both European partners and financial markets that Italy deserved to be trusted as a debtor, but still sensible enough to obtain an (albeit reluctant) approval from the majority of Members of Parliament and from public opinion. I had studied pensions systems for more than 20 years; I was now charged with reshaping that of Italy in less than 20 days.

The reform had to be radical, with practically no phasing-in period; it had to realize immediate and significant savings in pension expenditure to be automatically increased in the coming years and decades and provide for the demographic transition by reducing the burden on the young and future generations. It had to cancel or drastically reduce the distortions still embedded in the system after 20 years of reasonable but all too gradual reforms. Due to the financial emergency, there was little time for social dialog, parliamentary debate (the reform was presented to Parliament as a government decree and approved in a couple of weeks with a vote of confidence), or the transition period that is customary in pension reforms. The absence of a transition period caused a problem for workers who were already displaced from their job, in a mobility scheme, or expecting to retire within a few years or who had, at some point of their working life, voluntarily left their job, expecting pension laws to remain unchanged. The reform established a safeguard clause for 65,000 workers, according to an estimate by the Istituto Nazionale della Previdenza Sociale (INPS), the national pension office. It turned out later that the number was largely underestimated: Many individual and some collective agreements between workers and employers had been concluded without any formal registration. The press and public opinion lumped all cases together, called this group "Esodati", referring to a forced exodus from the labor market, and considered all of them as equally deserving of being safeguarded, irrespective of the heterogeneity of their situations and, in particular, that many of them had voluntarily left their job, often in exchange for a lump sum to be added to their severance pay. In a couple of subsequent provisions, the government added other 65,000 workers to the safeguard clause, for a total of 130,000 safeguarded workers. The subsequent government further increased the number to almost 150.000.

The reform speeded up the transition to the NDC system by extending to all workers (including members of Parliament), as of January 1, 2012, the DC method of benefit calculation. This was very important to restore to the formula, still largely

unfamiliar to the people and considered “too severe” by politicians.¹¹ In terms of parametric changes, the reform significantly raised statutory retirement ages and almost canceled the so-called seniority pensions, awarded on the basis of years of work, almost irrespective of age;¹² it aligned, as of 2018, the retirement ages of women to those of men; and it indexed all retirement requisites to changes in life expectancy. To regain some fairness to past excessively generous pensions, it established a “solidarity contribution” on very high pensions;¹³ on the other hand and, regrettably, given the country’s critical situation, the reform also had to freeze the indexation of pensions to prices for two years, excluding only pensions under €1,400 per month.

As a result, according to international evaluation (IMF, 2012; OECD, 2013c), the Italian pension system is now financially sustainable. Most families had to revise lifetime strategies downward to take into account the new situation. Despite widespread protests, no general strike was called by the trade unions. The reform not only reduced the implicit pension debt,¹⁴ but also challenged the “lump of labor fallacy” (see Section 7), an undeclared basis of past pension legislation and still a frequent claim in public debate, claiming that the reform would have reduced the number of jobs available to the young by keeping older workers at work for longer. Obviously, the extension of working life requires additional measures to stimulate the demand for older workers and this is more difficult in a recession.

Political debate concentrated on short term effects and almost disregarded the generational rebalancing in favor of the young. From a long-term view, however, this is the true value added of the pension reform (as well as of the subsequent labor market one). To not have clearly conveyed this message of a structural pension and labor market change remains, for me, a cause for regret and was certainly one of the shortcomings of government action.

Short-term effects were certainly not absent. Approval of the “Rescue Italy” decree, of which the pension reform was a fundamental part, resulted in a marked

¹¹ A common opinion among politicians, widely reflected in the media, was that the DC formula is good enough for the financial sustainability of the pension system but delivers insufficient benefits, implying that politics can do better than mathematics. Of course, while “doing better” is possible for workers who would not accumulate enough contributions to have an adequate pension, when applied to an entire generation it only means increasing the implicit pension debt and burdening young and future generations.

¹² Indeed, such seniority pensions have been abolished, since the system now contemplates, in line with most European systems, only anticipated pensions (with penalization) and old age pensions.

¹³ This was later canceled by the Constitutional Court, which considered the solidarity contribution equivalent to an ordinary income tax, ignoring that the DB formula implicitly favors higher pensions and thus realizes a regressive redistribution, granting unjustified presents to high-income earners with. Regrettably, this decision deprived the reform of one of its most noticeable traits of fairness.

¹⁴ According to the official projections made by the Central Government Budget Office (Ragioneria Generale dello Stato, 2012), in charge of managing public accounts, the net savings from the pension reform will amount to €80 billion in the decade 2012–2021.

reduction of the spread and was a fundamental factor behind the European Commission terminating in May 2012 the infraction procedure for excessive deficit, opened in 2009.

7. A new paradigm: Reform, Inform, and Educate

In Italy, as in other European countries, the task of restoring sustainability, adequacy, credibility, and fairness to the pension system is not yet finished and is not just a technical matter. The (remaining) technicalities of reform implementation must be complemented by cultural change, supported by unbiased information and by economic–financial education of the kind described above. Reforms require the solid backing of public opinion, which is possible only if people are informed and economically and financially literate.

It is thus important to adopt a new paradigm that can be summarized as follows: *reform, inform, and educate*.

i. Reform. The reform process has to be completed, according to consistent insurance principles, coupled with a fair amount of transparent redistribution in the right direction, that is, from richer to poorer. Adequate old age insurance, inclusive not only of retirement income but also of long-term care in old age, requires individuals to be safeguarded against market and personal failures affecting their pre-active and active life: lack of education, unemployment, sickness, and invalidity. After seven years of recession, the main challenge to the pension system remains, therefore, the way in which the labor market actually works. Dynamic and inclusive labor markets are the best premise for adequate pension systems. Pension and labor market reforms have to be better integrated and long-term employment-enhancing policies, such as apprenticeship and lifelong learning, must be given greater importance and more resources. Moreover, in a transparent system, privileges are more difficult to conceal and true solidarity easier to implement.

ii. Inform. The accumulation of pension wealth is a long and complex endeavor. Workers must have an idea, as precise as possible, of where they stand on pension wealth and retirement options so that they can make clear, rational retirement choices. This knowledge is essential—particularly in DC schemes—for individual planning, for example, in deciding whether to retire sooner or later and consume more or less and whether to participate in a supplementary pension plan and in deciding how to invest this part of one’s pension wealth. This should help avoid mistakes/big disappointments such as shortfalls of actual versus expected pension benefits and ensuing painful lifestyle adjustments. Information is also fundamental for reforms’ political sustainability: As shown in Section 5, widespread misinterpretation of reforms will lead to attempts to reverse them. The reluctance of governments and political parties to provide information for fear of losing consensus has to be overcome, possibly with the aid of international institutions, which obviously do not share the same fear.

iii. Educate. Understanding the basic elements of reforms requires not only good information, but also EFL. Research has shown widespread financial illiteracy. Citizens must be made aware that pensions are not the result of the generosity of politicians, but of the efficient management of their own savings, that they accumulate their own pension wealth—through their own notional account in an NDC system—by paying contributions (as part of labor costs) on their labor income: Each euro paid into their “retirement account” will contribute to determine the sum out of which their pension benefit will be paid and the longer the period, the higher the accumulated wealth. They should also be aware of the direct correlation, for a given amount of pension wealth, between benefits and retirement age. The knowledge of compound interest is crucial to an understanding of how pension wealth accumulation works.

Another fundamental concept is that the postponement of retirement contributes twice to benefit increases: through more contributions and through lower expected longevity as a pensioner. The core concept of risk diversification could help people make decisions about participating in a pension fund, as a way to combine both an unfunded and a funded pension, since these are characterized by different risk–returns combinations (see Section 4). People should also be aware that an efficient pension system is certainly not unsuited to solidarity. On the contrary, efficiency and transparency support the right redistribution while lack of transparency is usually associated with privileges. It is important to try and convey these essential concepts in a few simple messages.

Lack of EFL is also at the basis of erroneous beliefs, such as the lump of labor fallacy, such that early retirement is thought to be a good policy to increase the employment of the young. In some countries, this misconception has long dominated public debate in the field of pension reforms and brought about policies directed at reducing the retirement age. This belief creates hostility toward the reform and obscures its generational rebalancing by making people believe that if retirement age is postponed, there will be fewer opportunities for youths (and/or for women). However, while there is no theoretical ground for the claim, empirical analysis shows just the opposite; that is, the employment rate of the young is higher where the (average) retirement age is also higher.

The concepts of tradeoffs and their time dynamics, pervasive in our life, should also be part of EFL: There is a cost to be paid for any benefit and the two are not necessarily synchronized. Choices today have effects in the future. This is also reflected in public budgets, so some basic knowledge of public finance (concepts of deficit and debt) should be included in EFL. This means, of course, that politicians and the media should also be economically and financially educated.

8. Information and EFL: An alternative to both paternalism and populism

The mix of technical and political aspects in economic reforms varies according to each country's situation, the former tending to dominate in emergencies, since financial constraints then become more stringent. Although there isn't just one possible reform, politicians' degrees of freedom are reduced in an emergency and policy measures from either the right or the left tend to look alike. Political parties hate having to adopt such measures, since they imply comparatively higher present sacrifices in exchange for uncertain, collective future benefits. Populist temptations increase with the offer of relatively easy and painless solutions to complex problems and these certainly find more fertile ground in less literate citizens.

If reforms only consisted of rigid obligations and prohibitions, technocratic governments could then be a viable ad hoc solution. Technocrats could be temporarily hired on to make the reforms, which Parliament would approve "out of necessity," so that the former would take all the blame for current sacrifices while leaving it to the politicians returning to power after the crisis to reap the harvest of future benefits.

Very often, however, reforms involve a complex incentive structure, meant to change individual behavior to make it more intertemporally consistent. They thus need solid backing by public opinion. The following question then arises: How can we expect people to be able to look into the future when they have their hands full of present-day losses and worries? More specifically, how can public opinion be convinced that reforms involving sacrifices are generally not a choice but a necessity, an indispensable step to regain the prospect of a worthwhile future for the young generations? How can people be persuaded to accept that, with reforms, "things get worse before they get better"¹⁵?

A credible answer can hardly come from the same political parties who lacked the courage to devise and implement the reforms. It can instead come from citizens' personal conviction, stemming from knowledge and awareness. Information and EFL have the potential to create this knowledge and awareness.

Content of EFL should run along two parallel lines. The first one should make citizens aware of the main concepts of national accounting; the second one should explain principles of personal budgeting and financial planning. This should be a dimension accompanying individuals throughout their education (since childhood) and become a constant element of their adult life. Although of course the depth and complexity of this knowledge may vary considerably according to their study curriculum and their profession.

¹⁵ Winston Churchill, quoted in M. Gilbert, *Churchill and America*, New York, Free Press, 205, p. 395.

The increase of EFL (even on a very large scale) cannot, of course, be expected to be the successful answer to all economic and financial problems; it would be naïf to think otherwise, particularly as empirical evidence, to the best of my knowledge, has yet to be provided to support the hypothesis of a direct correlation between EFL and the effectiveness of reforms. “Nudges” can still encourage even economically and financially literate people to make “wise” choices (Thaler and Sunstein, 2014). There is no need, in my view, for one to exclude the other. Moreover, the process of trial and error advocated by Friedman as a substitute for financial knowledge might be extremely costly (more than investing in financial literacy)¹⁶; as might be reliance on experts (as the 2008 world financial turmoil has clearly shown).

In this broad perspective, politics will of course always have a role to play. EFL can help improve politics by providing antidotes to populist tendencies in difficult situations. EFL is neither an easy solution nor a miraculous one, but a firm basis for high social payoffs.

¹⁶ See Friedman (1953), quoted by Hastings et al. (2012).

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Appendix

The weight of public opinion: Partial or total reversals of pension reform attempts in Europe, 2004–2014

Italy. *Reversal in 2008 of the reform adopted in 2004 to improve the pension system's sustainability.* An agreement reached by the government and the trade unions in July 2007 prevented the indexation to life expectancy mechanism from becoming effective at the beginning of 2008 (which would have sharply increased the retirement age). A much smaller increase in pensionable age was introduced instead.

France. *Retirement age moves back and forward.* In 2010, the government raised the retirement age from 60 to 62 (at a rate of four months per year, the final age to be reached by 2018). A partial rollback was introduced in 2012 that restored the possibility of retiring at 60 for early starters who had started working at age 18–19 and had paid 41.5 years of contributions (more than 110,000 people took advantage of this reversal). In December 2013, access conditions to retirement were restricted again and payroll tax rates increased. According to the Council of the EU (Recommendation 2014/C 247/09), this recent measures “will only halve the system's total deficit to some 0,5% of GDP by 2020.”

Germany. *Rethinking in the land of reforms.* The pension reform approved by Parliament in May 2014 (as part of the Grand Coalition agreement signed after the latest political elections) relaxed the access conditions to early retirement to 63 years of age or even, in some cases, to age 61 for certain groups of workers. A pension supplement was also included for the parents of children born before 1992 (about 9.5 million workers). This law rolled back the reform, introduced in 2007, that had introduced a gradual increase in the official retirement age by two years to 67 between 2012 and 2029. The Council of the EU (Recommendation 247/05, July 2014) warned that the “reform puts an additional strain on the sustainability of the public pension system and is planned to be financed by a higher pension contribution rate.”

Poland. *State versus private pensions.* On December 2013, Parliament voted to redirect part of the contributions paid into private pension funds into the state's Social Insurance Institution (ZUS). This is a sharp reversal of the 1999 reform, when the Polish pension system was reshaped in favor of the second pillar and workers were given the freedom to choose where to invest part of their social contributions. When this reform took effect in February 2014, 51.5 percent of open pension fund portfolios (€37 billion as at March 6, 2014) were transferred to the ZUS.

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N° 4/01	Peter Diamond	Towards an Optimal Social Security Design
N° 3/00	Emanuele Baldacci Luca Inglese	Le caratteristiche socio economiche dei pensionati in Italia. Analisi della distribuzione dei redditi da pensione (only available in the Italian version)
N° 2/00	Pier Marco Ferraresi Elsa Fornero	Social Security Transition in Italy: Costs, Distorsions and (some) Possible Correction
N° 1/00	Guido Menzio	Opting Out of Social Security over the Life Cycle