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## Chapter 18

# NDCs in Italy: Unsatisfactory Present, Uncertain Future

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REFORM OF THE PENSION SYSTEM IS AT THE CORE OF THE EFFORT to ensure fiscal consolidation and long-term fiscal sustainability in Italy. Pension spending is proportionally higher than in any other Western industrial country (15.5 percent of GDP in 2002) and the fertility rate is the lowest (1.2 children per woman of childbearing age). The ratio of the population aged 65 and over to the population aged 15 to 64 is expected to increase from 26.6 percent in 2000 to 37.2 percent in 2020 and 60.1 percent in 2040;<sup>1</sup> it will be among the highest in the world. Pension reform is an important component of any policy aimed at improving the functioning of the labor market, particularly at increasing the present low participation rate. Since pensions account for 70 percent of total social spending, pension reform is also a precondition for improving public support for nonelderly groups and additional spending on long-term care.

The reform process began in 1992 when about a quarter of prospective public sector pension liabilities were canceled. A second major reform was introduced in 1995. This latter reform, which has many similarities to the reform process undertaken in Sweden in 1994, introduced NDC in the pay-as-you-go (PAYG) pension pillar. According to this second reform, pensions are determined on a defined contribution basis, and notionally accumulated contributions will be transformed into an annuity at retirement.

Further minor reforms were introduced in the years immediately following 1995. Significant changes were legislated in 2004. Some changes question the underlying philosophy of the 1995 reform. This continuous debate contrasts with the rule stability required for the proper functioning of an NDC scheme.

This chapter examines the achievements and the main problems of the 1995 pension reform. Among the achievements are improvements in the incentive structure—in particular, the greater incentive to postpone retirement—and the introduction of some self-equilibrating mechanisms. Among the problems are the slow transition to the new regime, the expected increase in the ratio of pension expenditure to GDP, the social unsustainability of

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The issues dealt with in the chapter are also examined in Franco (2002a, 2002b) and Sartor (2001). The authors are grateful to Edward Palmer for useful comments on the preliminary version of the study. The usual disclaimer applies.

some features of the system, and flaws in the design of the self-equilibrating mechanisms. The chapter also examines the process that led to the fast introduction of the reform, and the consequences of the lack of an extensive open debate about its implications. Finally, it considers the future of NDC in Italy.

The next section briefly outlines the reforms introduced up to 1995. The following section describes the 1995 reform, which introduced NDC in Italy. The next two sections, respectively, examine the impact of the reforms on individuals and on overall long-term spending. The chapter then highlights the vulnerability of the new pension rules to economic and demographic shocks. The following section points to the possible lack of micro-economic effects. The chapter next surveys the proposals for further reforms, and then considers the future of NDC in Italy. The final section draws some conclusions.

### **The Reform Process up to 1995**

The issue of pension reform has been extensively discussed since the late 1970s,<sup>2</sup> but no major action was taken till the early 1990s when changes became extremely urgent.

#### *The Need for Reform*

Three main factors called for a reform.<sup>3</sup> First, pension expenditure, which had increased from 5.0 percent of GDP in 1960 to 14.9 percent in 1992, was expected to increase further and get close to 25 percent of GDP by 2030. The contribution rate needed to cover benefits of private sector employees was set to increase from 44 percent in 1995 to 60 percent in 2025. The pension formula, the eligibility conditions, and the indexation rules granted rates of return that were considerably higher than the rate of growth of the social security tax base.<sup>4</sup> Pension spending contributed largely to the overall imbalance of Italian public finances.<sup>5</sup>

Second, there were labor market reasons. Provisions allowing for seniority pensions—that is, the possibility of receiving a full benefit irrespective of age with 35 years of contributions (20 to 25 years in the public sector)—tended to foster early retirement and informal employment arrangements to avoid paying contributions. Similar effects were exerted by the rules limiting the possibility of receiving pension and labor income at the same time. The lack of an actuarial correlation between the size of the pension benefit and the age of retirement was an incentive for the earliest possible retirement. In other words, there was a high implicit tax on continuing to work.<sup>6</sup> This situation was reflected in the low employment rates of older men and women.<sup>7</sup> In addition, the segmentation of the overall pension system into several separate pension schemes, each one operating with its own rules, hampered the mobility of workers both between and within the public and private sectors.

Finally, there were equity reasons for reform. The rate of return on contributions was extremely uneven.<sup>8</sup> The reference period for calculating pensionable earnings worked in favor of those whose earnings had risen most rapidly toward the end of their careers. In particular, public sector employees and the self-employed had very advantageous rules.<sup>9</sup> Inflation rates affected the relative value of retirement benefits both at award and after. Although the increase in outlays was accompanied by a sharp improvement in the economic conditions of the elderly and of pension beneficiaries in general,<sup>10</sup> it also constrained the resources available for other social policies.

#### *The 1992 Reform*

The first main reform came in 1992 under the pressure of an exchange rate crisis and the urgent need to curb the deficit.<sup>11</sup> It was a parametric reform that introduced several

changes, which had been extensively discussed over the previous years (see table 18.1).<sup>12</sup> The retirement age for old-age benefits was raised (over a 10-year period) from 55 to 60 for women and from 60 to 65 for men in private employment. The reference period for calculating pensionable earnings was lengthened from 5 to 10 years; for younger workers it was extended to the whole working life.<sup>13</sup> The minimum number of contributing years for entitlement to an old-age pension was raised from 15 to 20. The reference index for the indexation of pension benefits was changed from wages to prices. The minimum number of years of contributions required for public sector employees to be entitled to a seniority pension was gradually raised to 35, a threshold previously applied to private sector workers only.<sup>14</sup>

The reform implemented in 1992 substantially changed the outlook for pension expenditure. At least a quarter of net pension liabilities were canceled. According to Beltrametti (1996), total outstanding liabilities were reduced from 389 percent to 278 percent of GDP.<sup>15</sup> Rostagno (1996) estimates that the liabilities of the scheme for private sector employees were reduced by 27 percent.

The reform also started a gradual harmonization of pension rules and, by relating the pension levels of younger workers to lifetime contributions, strengthened the link between contributions and benefits. However, it did not tackle the issue of seniority pensions for private sector workers. This aspect substantially reduced the impact on the effective retirement age of the increase in the age limit for old-age pensions. Moreover, the exclusion of individuals with at least 15 years of contributions from changes in the pension formula determines a long transition period and an uneven distribution of the reform burden.

By breaking the deadlock of Italian pension policy and immediately restraining expenditure increases, the parametric reform of 1992 set the conditions for better planned and more systematic changes.

### **The 1995 Pension Reform**

In spite of the 1992 reform, expenditure prospects still remained rather worrying. In 1995, both the National Social Security Institute (INPS) and the Ministero del Tesoro released projections that were more worrying than those carried out in the two previous years.<sup>16</sup> These expenditure forecasts and the high level of contribution rates that would be needed to finance spending pointed to the need for a major new reform. This came in 1995. The reform determined a shift from a defined benefit to a defined contribution system in which the notional accumulated contributions on individual accounts are transformed into an annuity at retirement.<sup>17</sup>

The new reform aimed at stabilizing the incidence of pension expenditure on GDP, at reducing distortions in the labor market, and at making the system fairer.<sup>18</sup> A tighter link of pensions to individual contributions was instrumental in achieving the latter objectives. It was expected that contributions would have been more clearly perceived as individual savings, thereby reducing the distortionary effect of labor income taxation. Evasion was expected to be reduced by the contribution-based formula combined with the reduction in the minimum service requirement for old-age pensions.<sup>19</sup> The 1995 reform aimed at equalizing the yields of the contributions paid by all workers of the same sex and the same pension cohort (that is, those who begin to work and retire in the same years). It removed the favorable treatment previously granted to workers with dynamic careers. Under the new rules, which apply to all categories of workers, individual pension wealth would depend on contributions made on lifetime earnings.

Table 18.1 summarizes the main features of the reform, which are that:

1. Old-age pensions are related to the contributions paid over the whole working life (capitalized at a five-year moving average of GDP growth) and to the age of the individual, at retirement. Each worker holds a notional social security account. On retirement the pension is determined by multiplying the balance of the account by an age-related conversion coefficient. Benefits will continue to be provided on a totally PAYG basis.
2. Contributions are proportional to earnings. However, the rate at which contributions are imputed to the notional accounts (33 percent for employees and 20 percent for the self-employed) is higher than the rate actually paid by individuals (which were initially 32 percent and 15 percent, and are now respectively 32.7 percent and about 17 percent; the latter rate will gradually increase to 19 percent).
3. The formula used to calculate the initial pension award is the following:

$$P_t = \beta c W_t \sum_{k=1}^a (l+w)^{k-1} (l+g)^{a-k}$$

where  $\beta$  is the conversion coefficient;  $c$  is the contribution rate;  $W_t$  is the entry wage;  $a$  is the number of years of contribution;  $w$  is the average annual rise in the earnings of each worker over his/her entire career; and  $g$  is the average rate of increase in real GDP. The conversion coefficients, which are determined on the basis of average life expectancy—including the probability of paying benefits to survivors—and a 1.5 percent rate of return on accumulated contributions, range from 4.7 percent (for those retiring at 57 years of age) and 6.1 percent (for those retiring at 65 years of age).

4. Conversion coefficients are to be revised every 10 years on the basis of changes in life expectancy and a comparison of the rates of growth of GDP and earnings assessed for social security contributions.
5. Individuals can choose their retirement age between 57 and 65 years, provided the pension is at least 1.2 times higher than the welfare benefit for elderly citizens. Seniority pensions are abolished for individuals covered by the new regime. However, this change is purely notional, as a pension granted to a 57 years old person can hardly be labeled an old-age benefit.
6. The minimum number of years of contributions required for an old-age pension is reduced to 5. The guaranteed minimum pension level is abolished. Welfare pensions for elderly citizens are to be reformed.
7. Survivors' benefits are retained, but they are reduced by up to 50 percent depending on the spouse's other incomes. The reduction does not apply to families with children who are minors, students, or disabled.
8. Pension benefits are adjusted yearly to changes in price levels, measured by the consumer price index.<sup>20</sup>

The rapid introduction of NDC represents a striking development in Italian pension policy. Over a short period, Italy introduced new rules aimed at improving the incentive structure of the pension system, simplifying its complex redistributive effects, and automatically adjusting benefits to demographic and economic trends. However, a number of problems remain open: the transition to the new regime is extremely slow, pension expenditure will continue to increase faster than GDP for some time to come, and the self-equilibrating mechanisms are partial and slow. As a result, both the microeconomic benefits and the macroeconomic sustainability of the new rules are far from granted.

**Table 18.1. Mandatory Public Pension Scheme for Employees<sup>a</sup>**

Main Features	Before 1992		1992 Reform		1995 Reform
	Private sector	General government	Private sector	General government <sup>b</sup>	Everyone
Old age Age:	men: 60 years women: 55 years	everyone: 65 years <sup>c</sup>	men: 65 years women: 60 years	everyone: 65 years	57 years of age and 5 years of contributions <sup>d</sup> OR age 65+, OR 40+ years of contribution
Minimum contribution:	15 years	15 years	20 years		
Eligibility requirements for:					
Seniority	35 years of contribution	20 years of contribution <sup>e</sup>	35 years of contribution		Abolished
Survivors	5 years of contribution		5 years of contribution		5 years of contribution
Earnings for computing pension benefits	Average of last 5 years	Final year <sup>f</sup>	Average lifetime earnings		Average lifetime earnings
Ceiling	N.A. <sup>g</sup>	N.A. <sup>g</sup>	N.A. <sup>g</sup>		68,000 euros per year
Replacement rate	2% per year <sup>h</sup>	2.33–1.80% per year <sup>i</sup>	2% per year <sup>h</sup>		Negatively related to expected life, applied to 33% of the present value of lifetime contributions compounded at the nominal GDP growth rate
Floor	4,150 euros per year <sup>j</sup>	N.A.	4,150 euros per year <sup>j</sup>	N.A.	N.A.
Pension benefit indexed to:	Nominal wages <sup>k</sup>	Nominal wages <sup>k</sup>	Retail prices <sup>k</sup>	Retail prices <sup>k</sup>	Retail prices <sup>k</sup>

Source: Sartor 2001.

a. As far as the 1992 and 1995 reforms are concerned, the table highlights the rules applicable to workers with less than 18 years of contribution in 1995.

b. Central government employees. Other public employees are subject to different eligibility rules, specified in footnotes.

c. Reduced to 60 years for blue-collar women and for all employees of local bodies.

d. Provided that the pension benefit exceeds the "social benefit" by at least 20 percent. For 1996, the social benefit amounts to € 3,200.

e. The eligibility condition is reduced to 15 years of contribution for married women, women with children, and military personnel.

f. Base salary is increased by 18 percent as a one-off compensation for the exclusion of parts of the effective salary.

g. The replacement rate is reduced on wages exceeding a certain threshold.

h. The rate is progressively reduced to 0.9 for earnings exceeding € 27,650 per year.

i. Applicable respectively to the first 15 and to the remaining years of contribution. For employees of local bodies (to whom footnote e is not relevant), the rate applied to the first 15 years is increased to 2.50 percent.

j. Entitlement to the floor is conditional upon holding other incomes not exceeding twice the floor.

k. The indexation coefficient is progressively reduced from 100 percent to 75 percent for pension benefits exceeding twice the floor.

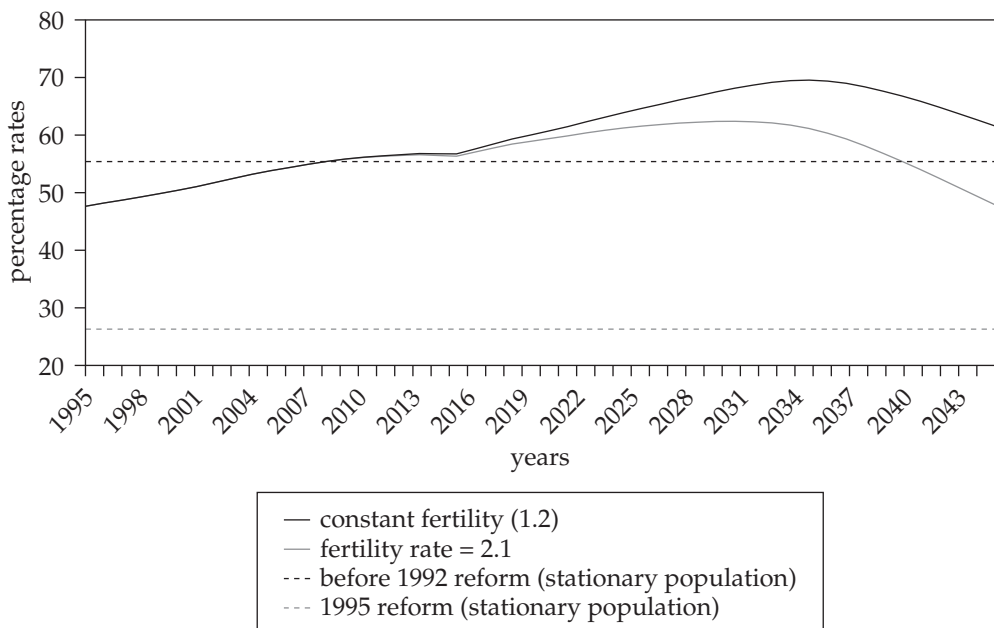
Further changes were introduced in the pension system in 2004. The eligibility conditions for seniority pensions will tighten as of 2008. The minimum retirement age in the new NDC system will be 65 years for men and 60 for women. These measures are not expected to modify the long-term expenditure outlook.

### The Overall Impact of Reforms on Individuals

The reforms introduced in the pension system in the 1990s substantially contributed to changing the outlook for Italian public finances.<sup>21</sup> To analyze the long-run effects of the reform, it is useful to split the upward pressure on pension expenditure into its main components. In each point in time, pension expenditure depends on: (1) entitlement rules; (2) the demographic structure; (3) labor market performance; and (4) the macroeconomic scenario.

Figure 18.1 and table 18.2 summarize the main effects in the change of entitlements.<sup>22</sup> Under a stationary population (for example, a population the age structure of which is determined by survival rates only), comparison between the situation before the 1992

**Figure 18.1. Effective Equilibrium Contributory Rates (legislated transition)**  
 $r = 3.0\%$ ;  $g = 1.5\%$



Source: Sartor 2001.

- Contributory rates are expressed as a percentage of gross salary and computed on the basis of a 1.5 percent long-term increase of productivity and a 3.0 percent real interest rate.
- Constant number of newborns. The relative dimension of cohort is therefore determined by survival rates.
- The demographic scenario assumes a 10 years increase in the total fertility rate from the current value (1.2) to 1.8.
- Average effective seniority observed in the 1993 surveys carried out by the Bank of Italy.
- As for state employees, effective average seniority is taken from Pandimiglio (1990).

**Table 18.2. Equilibrium Contributory Rates for Employees<sup>a</sup>**

<i>Pensions to survivors</i>	<i>Pay As You Go</i>				
	<i>Stationary population<sup>b</sup></i>			<i>Effective demographic structure</i>	
	<i>Overall</i>	<i>Private sector</i>	<i>State</i>	<i>1995</i>	<i>2040<sup>c</sup></i>
				<i>Overall</i>	
<b>Before 1992 Reform</b>					
Minimum seniority					
No	59.4	53.5	87.3	50.9	88.3
Yes	60.9		52.2	90.6	
Average <sup>d</sup> seniority					
No	52.5	49.4	58.1	45.2	84.9
Yes	54.1		46.6	87.4	
Average <sup>e</sup> seniority					
No	53.8	49.4	68.2	46.2	84.4
Yes	55.4		47.6	87.0	
<b>1995 Reform</b>					
Minimum seniority					
No	25.2			21.8	39.3
Yes	26.3			22.8	40.8

*Notes:*

a. As a percentage of gross salary, on the basis of a 1.5 % long-term increase of productivity and a 3.0% real interest rate.

b. Constant number of newborns. The relative dimension of cohort is therefore determined by survival rates.

c. The demographic scenario assumes a 10 years increase in the total fertility rate from the current value (1.2) to 1.8.

d. Average effective seniority observed in the 1993 surveys carried out by the Bank of Italy.

e. As for state employees, effective average seniority taken from Pandimiglio (1990).

*Source:* Sartor (2001).

reform and after the 1995 reform shows that the contribution rate required to finance expenditures has been more than halved (from the 54 to 61 percent range to between 25 and 26 percent).

Table 18.3 reports three sets of indexes of pension incidence calculated for representative workers: the first summarizes the incidence of the years after retirement in the lifetime of an individual and the other two refer to the amount of pension benefits. The indexes refer to the conditions that a member of a cohort born in the base year will experience during his or her lifetime, and are therefore independent of the current population structure. Indexes related to benefits are normalized to the average wage paid in the base year to a representative member of the group.

It can be noted that the time spent in retirement is reduced for all categories. As expected, the reduction is largest for public employees, because in the past they were entitled to a special early retirement scheme. The reduction is very small for a non-university-graduate man employed in the private sector. The reduction of time in retirement is much greater when assessed relative to the working period, as the reform decreases the numerator and increases the denominator. Time spent in retirement is reduced by 23 percent if compared with a whole adult life, and by 38 percent if compared with years of work. Most importantly, the degree of dispersion across groups is substantially reduced,

**Table 18.3. Selected Indicators of the Italian Mandatory Pension Scheme for Employees  
Old-Age and Seniority Pensions for Employees—Average Seniority**

	Frequency				Average effective pension at 60 <sup>c</sup>				Net present values							
	Retirement during lifetime <sup>a</sup>		Retirement over work <sup>b</sup>		Before reform		1995 reform		Before reform		1995 reform		Before reform		1995 reform	
	Before 1992 reform	1995 reform	Before 1992 reform	1995 reform	Before 1992 reform	1995 reform	Before 1992 reform	1995 reform	Before 1992 reform	1995 reform	Before 1992 reform	1995 reform	Before 1992 reform	1995 reform		
<b>Private sector</b>																
Men																
nongraduates	0.33	0.35	0.49	0.52	2.57	1.58	2.93	1.66	2.01	18.50						
university graduates	0.35	0.33	0.64	0.57	3.47	1.65	7.02	2.91	35.39	32.76						
Women																
nongraduates	0.43	0.40	0.77	0.66	1.96	1.33	2.61	1.45	15.07	14.42						
university graduates	0.43	0.38	0.86	0.71	1.95	1.19	4.22	2.02	21.67	20.58						
<b>General government<sup>e</sup></b>																
Men																
nongraduates	0.49	0.34	1.01	0.53	1.34	1.30	3.06	1.51	16.62	17.92						
university graduates	0.47	0.33	1.13	0.59	1.70	1.28	5.05	1.99	21.43	23.14						
Women																
nongraduates	0.53	0.39	1.23	0.68	1.91	1.29	4.68	1.67	17.49	17.56						
university graduates	0.54	0.38	1.46	0.73	1.65	1.33	4.68	1.94	17.48	19.41						
Overall <sup>d</sup>	0.41	0.37	0.72	0.59	2.16	1.43	3.23	1.63	18.09	17.44						
Mean absolute deviation	0.06	0.07	0.34	0.14	0.62	0.29	1.54	0.48	5.60	5.23						

Notes:

a. Ratio of cumulative retirement frequencies to the cumulated survival rates between age 18 and age 90+.

b. Ratio of cumulative retirement frequencies to cumulative employment frequencies.

c. As a ratio to the average salary earned in the base year by a male employed in the same sector with seniority lower than 5 years.

d. Based on mortality rates observed in the base year and a 3% real interest rate. Also see footnote (c).

e. Average seniority at early retirement based on data reported by Pandimiglio (1990).

Source: Sartor 2001.

as the mean absolute deviation decreases from 0.75 to 0.14, thus increasing the neutrality of the mandatory pension scheme vis-à-vis labor force allocative decisions. The reduction in dispersion (between 50 and 70 percent) primarily reflects the abolition of the preferential treatment (minimum seniority requirement) previously awarded to public employees (see endnote 14) and can be interpreted as a quantitative indicator of the improvement in overall equity.

The reforms determine a large reduction in per capita benefits. This point is illustrated by the last two sets of indexes in table 18.3, referring respectively to the average pension benefit at the age of 60<sup>23</sup> and the net present base-year-value of incomes. Under the baseline scenario, the average pension earned at the age of 60 is reduced by 34 percent, of which 14 percentage points are due to the longer time horizon for determining earnings for computing benefits (from the final 5 years and the final year, respectively, for private and public sector employees under the old rules, to the entire working life for both categories under the new rules). The reduction in benefits reaches 50 percent if the lifetime stream of pension benefits is taken into account. The reason for this further reduction is twofold. First, fewer years, on average, will be spent in retirement (the *frequency effect*); second, the 1992 reform has abolished the indexation of pension benefits to productivity growth. Although in terms of net present value the greatest reduction is suffered by public employees (because of the above-mentioned frequency effect), their average effective pension at the age of 60 is not significantly decreased because the effect on benefits accompanying the lengthening of the working period offsets the reduction in the replacement rate.

As far as lifetime income from earnings and pension benefits are concerned, individuals will be marginally affected (the reduction for the representative member of the cohort is equal to 4 percent), as the increase in labor earnings caused by lengthening the minimum contributory period almost offsets the decrease in pension benefits. This overall result subsumes different outcomes for the two sectors: public sector workers will experience an increase in net present base-year-values of earnings, while private sector workers will suffer a reduction. The above results stress the importance of separating welfare effects from income effects when assessing pension reforms. Although the reform may be welfare reducing for all the cohorts who will have to spend a longer period in work, income effects are sometimes positive and, when negative, are quantitatively minor.

Overall, the 1992 and 1995 reforms have significantly modified the size and features of pension entitlements. The new pension system, when reaching maturity, will be characterized as follows: (1) the degree of horizontal equity of the system will be significantly increased; (2) the reduction of pension spending will be mainly achieved by lengthening the working period, thus avoiding significant cuts in individuals lifetime earnings; (3) if the demographic outlook were not so gloomy, the contribution rates needed to balance contribution revenues and expenditures would be far below current legal rates and long-run financial sustainability would have been achieved.

## The Long-Term Outlook of Overall Spending Remains Problematic

### *Expenditure Trends*

Despite the relevant cut of entitlements, the contributory rate at which the system reaches equilibrium is bound to increase above the initial level irrespective of the demographic scenario (figure 18.1). This largely depends on the demographic outlook and, to only a minor extent, to the slow transition to the new rules. According to generational accounting estimates,<sup>24</sup> the reforms decreased the intertemporal balance gap (that is, the amount of future implicit overall government liabilities) from 106 percent to 58 percent of outstand-

ing public debt. Full fiscal sustainability would require a 9.7-point increase in overall taxation (or an expenditure cut of a similar magnitude). With a faster and more equitable transition based on a pro-rata criterion, the increase in overall taxation would be 1.7 percentage points lower (8.0 percent instead of 9.7 percent).

When analyzing the long-term outlook, the role of the slow transition is minor when compared with the effects of the demographic scenario and the overall delay in changing entitlements. Even if the new rules were applied to all workers, a progressive deterioration of the financial equilibrium would derive from the slow but continuous change of the age structure of the Italian population.<sup>25</sup> The relative importance of the demographic scenario and the overall delay in reforming the system can be quantified with reference to the following two counterfactual scenarios: (1) if the population size and structure remained constant through time, the intertemporal balance gap would be negative (net future implicit assets would be equal to 64 percent of outstanding public debt) and fiscal equilibrium would allow a tax cut (or an expenditure increase) equal to 5.0 percentage points even under the legislated slow transition; (2) if the pension reforms were already mature in 1995 (which would require that they had been introduced four decades earlier), the intertemporal balance gap would still be negative, although its size would be smaller than under the previous hypothesis (net public assets would be equal to 46 percent). In this latter case, fiscal equilibrium would allow a tax cut equal to 3.7 percentage points.

As for the transition, workers with at least 18 years of contributions in 1995 will receive a pension computed on the basis of the rules applying before the 1992 reform. Those with fewer than 18 years of contributions in 1992 will be subject to a pro rata regime: the 1995 reform will apply only to the contributions paid after 1995.<sup>26</sup> Only individuals beginning to work after 1995 will receive a pension fully computed on the basis of the new rules. Moreover, only these individuals will be subject to the new eligibility conditions, in particular the abolition of the seniority pension and the introduction of the 57–65 age bracket for old-age pensions. For those exempted by the changes, the incentive to retire early will even be increased by the expectations that retirement conditions might be tightened in the future.<sup>27</sup> This implies that, in spite of the increase in the age limit for old-age pensions, the effective retirement age is likely to remain unaffected for the next 15 years.<sup>28</sup> According to the estimates based on intergenerational accounting,<sup>29</sup> the deviation from a general pro-rata rule represents a windfall gain the magnitude of which varies according to individual characteristics and reaches a maximum of a 40 percent increase in net lifetime transfers (that is, pension benefits net of contributions) for cohorts aged 45 in 1995.

Several other studies, some of them prepared by official bodies,<sup>30</sup> point to the need for further tightening of the pension rules. Ministero del Tesoro (2002) estimates that the ratio of pension expenditure to GDP of the main public schemes will rise from 13.8 percent of GDP in 2001 to 16.0 percent in 2033. Subsequently, even though the ratio of pensioners to workers is forecast to rise sharply, expenditure is expected stabilize in relation to GDP for some years and to significantly decline thereafter (to 13.6 percent in 2050).<sup>31</sup>

These expenditure trends imply either larger transfers from general taxation or a further increase in social security contribution rates, which are already higher than in the other leading industrial countries.<sup>32</sup> Both these solutions appear problematic in a context of growing mobility of tax bases, which accentuates the distortionary effects produced by taxation in the markets for goods and factors of production.

In the end, the further expansion of pension expenditures may mean that primary non-pension expenditure will have to be substantially squeezed. This may be quite difficult in a situation in which increased labor market flexibility requires a strengthening of the social security net to cope with the higher probability of frequent unemployment spells.

### *Unsustainable Spending Cuts?*

Further concern stems from the composition of the expenditure cuts introduced by the 1992 and 1995 reforms. As noted earlier, the NDC pension formula provides greater incentives to postpone retirement. A lengthening of the working period would avoid significant cuts in individual pension levels; some workers retiring late would even receive higher pensions than under the previous retirement rules (although the net present value of lifetime pension benefits would be lower than under the old system); overall lifetime income could even increase (see table 18.3). The actual average retirement age, which will determine the average future pension level, will depend both on the decisions of the individuals and the conditions of the labor market. There is a risk that the average retirement age will not increase significantly.

The official pension expenditure projections seem to take the view that this risk exists. According to Ministero del Tesoro (2002), the ratio between the pensions paid by the main pension funds and the total number of persons in work will rise from about 87 percent in 2000 to 90 percent in 2015, 110 percent in 2030, and 125 percent in 2050. The ratio of the average pension to per capita GDP will increase from 15.7 percent to 16.1 percent in 2015 and then decline to 14.3 percent in 2030 and 11 percent in 2050. These projections assume that pensions will remain indexed exclusively to prices and that the conversion coefficients used to relate new pensions to the contribution record of each individual will be revised every 10 years on the basis of demographic trends. In these forecasts the plan for bringing the pension system back into balance relies primarily on reducing the average pension, and limiting the number of beneficiaries plays a relatively modest role.

This composition of expenditure cuts depends on several factors. First, in spite of the increase in longevity, individuals will still be allowed to obtain a pension at 57.<sup>33</sup> The actuarial reduction of benefits will provide individuals with a greater incentive to delay retirement than under previous rules, but the conversion coefficients embody a discount rate that may still provide an incentive to quit the labor market<sup>34</sup> or may not discourage individuals from claiming a poor, actuarially reduced, pension at an early age.<sup>35</sup>

Second, indexation to prices implies that the income of each pensioner declines over time in comparison with the income of workers and younger pensioners.<sup>36</sup> This effect ("vintage pensions") is particularly important if individuals are allowed to retire rather early. The problem is particularly acute for relatively small pensions. In the long run, if indexed only to prices, these pensions would provide income on the borderline of poverty. However, a full or a partial indexation to increases in real wages would have required a reduction in the replacement rate at retirement.<sup>37</sup> If individuals are not fully aware of the long-term implications of price indexation on the relative purchasing power of their pensions, this solution may induce them to anticipate retirement with respect to a situation in which pensions are lower at retirement but are wage-indexed thereafter.

Finally, the current wage structure, which puts a strong premium on seniority, may prevent the labor market from accommodating an increase in labor supply by elderly individuals.

The decisions to allow retirement at 57 and to rely on price indexation may also depend on the desire to facilitate the introduction of the reform by shifting difficult problems into the future. The same consideration applies to the decision to have revisions of conversion coefficients at 10-year intervals, starting from 2005. This solution is going to produce large differences in the treatment of contiguous generations of pensioners, which may be politically problematic.

Overall, the solutions adopted in 1995 may create political pressure for discretionary increases of pensions in real terms,<sup>38</sup> which would not be sustainable. In the end, there

may be a need to rely increasingly on solutions that tighten the eligibility conditions for retirement and to remove obstacles limiting the work activity of elderly workers.

### **Vulnerability to Shocks Is Still Large**

At the individual level, the system—by mimicking the logic of a fully funded scheme—is based on a close link between contributions and benefits. As such, it poses no major problems from a horizontal equity perspective. However, financial problems may arise at the macro level, as the system, being pure PAYG, remains vulnerable to demographic and economic shocks.<sup>39</sup> Stability of the equilibrium contributory rate therefore requires either the presence of built-in stabilizers, such as those incorporated into the Swedish system since 2001,<sup>40</sup> or periodic ad hoc adjustments to the changed scenario. The difficult and lengthy process that all parliamentary democracies face when cutting entitlements suggests the former solution. In the case of NDC, the traditional political difficulties may be fostered by psychological difficulties arising from the (wrong) perception by contributors that the pension system as a whole is always in balance, insofar as individual benefits are linked to past individual contributions. If this misperception is in place, it will be hard to convince public opinion that benefits have to be reduced because of an unexpectedly unfavorable macroeconomic or demographic scenario.

The Italian system has no automatic stabilizers. In particular, the indexation of pension is exogenous. There is only a general proviso that requires a reassessment of parameters every 10 years to take any change in the demographic scenario into account. Moreover, the law does not indicate any precise methodology, or formula, for changing the parameters.

As for the sources of fluctuation, the switch from wage to price indexation of benefits has been a move toward disequilibrium. If on one hand price indexation determines a gradual decrease of expenditures, on the other it increases the sensitivity of the equilibrium contributory rate to productivity increases. Sartor (2001, table 10), by considering productivity growth rates between 0 and 4 percent, estimates that under a stable population, the mean absolute deviation of the equilibrium contributory rate has almost doubled (from 3.8 to 7.0) because of the indexation switch. The reason is quite simple: as contributions are a function of the wage bill, wage indexation of benefits makes expenditure move with revenues, thus stabilizing the equilibrium rate.

Increases in life expectancy would reduce new pension benefits via the conversion coefficients. However, it takes a long time before the impact of increases in life expectancy on the number of pensions is fully offset by the reduction in the average amount paid to each pensioner. This depends on the fact that reductions in mortality rates that take place after a pension is awarded do not affect its level. The 10-year interval between revisions in coefficients increases further the adjustment lag.<sup>41</sup> The system is also vulnerable to reductions in birth rates, which do not affect the amount of accumulated contributions and the pensions already awarded. A lasting decline in the ratio to GDP of earnings assessed for social security contributions can affect new pension benefits via the conversion coefficients. As in the case of changes in life expectancy, financial equilibrium would lag far behind.

In the end, given the incompleteness of the corrective mechanisms, adverse demographic and economic events can determine cash deficits that can be avoided only by ad hoc cuts in pensions and changes in the pension formula, just as in traditional PAYG systems. As is well known, with an NDC scheme, increases in contribution rates would only have temporary effects, since they would translate into higher benefits.<sup>42</sup> Moreover, the conversion coefficients have been computed without taking part of the expenditure for

disability and survivors' pensions into consideration. More specifically, it has not been considered that disabled workers will receive benefits in excess of those awarded on the basis of their contributions. Gronchi (1998) tentatively estimates that this expenditure may represent 2 percentage points of earnings. Pensions paid to survivors of deceased workers have also been disregarded. These benefits have been implicitly considered welfare benefits to be financed by the government budget.<sup>43</sup>

The predetermination of the rate of return on accumulated contributions (1.5 percent) introduces some further inflexibility in the system.<sup>44</sup> It reduces the capacity to absorb shocks and, given the decline in the population of working age, it may generate persistent imbalances if productivity does not increase fast.

### **Is the Reform Providing the Expected Microeconomic Effects?**

The strengthening of actuarial principles in social security systems has been advocated to limit some of the negative effects of the systems on labor market and employment.<sup>45</sup> Contributions are often loosely related to benefits, so that they are largely regarded as a tax; expenditure controls frequently rely on administrative constraints rather than on built-in incentives; redistribution and insurance features are frequently mixed; and insurance schemes are utilized for inappropriate distribution objectives. The strengthening of the contributions-benefits link increases the incentive to work and, more specifically, to stay on in regular jobs (since benefits would depend on work record), to delay retirement, and to move from benefits to work. In the case of pension schemes, this may imply increasing the role of funding (where the contributions-benefits link is typically very strong), or shifting PAYG schemes from defined benefits systems (which base pensions on earnings in final period of work) to defined contribution systems (which base pensions on contributions paid over whole working life). Since 1995, Italy has taken both routes.

Table 18.4 illustrates the incentive effect of the reform on a private sector, married worker by considering the effect of postponing retirement by one year on: (1) the replacement rate, (2) the accrual rate on notional contributions (for example, the percentage change in social security wealth), and (3) the implicit overall net tax rate on potential earnings. Data from 1995 refer to the situation that would prevail when the system has reached maturity, thus ignoring the long transitional period. Substantial progress has been made with reference to the situation prevailing before 1992. Despite the overall cut in the replacement rate, the marginal tax rate has been greatly reduced (for a 57-year-old worker, from 25.7 percent to 4.4 percent). The 1995 scheme, however, still incorporates minor disincentives to work. The accrual rate is always negative (ranging from -0.4 percent at the age of 60 to -4.6 percent at 65) and the marginal tax rate is always positive. As for the latter, its value is small in the 57-61 age range (from 4.4 percent to 6.3 percent), but increases thereafter, reaching a peak of 43.2 percent at the age of 65; after this age there is no further increase in the actuarial adjustment factor to the NDC conversion coefficient.

Moreover, an actuarially-based pension system such as that introduced in Italy in 1995 cannot be expected to automatically deliver the expected labor market benefits. As long as citizens do not understand how NDC works, it is unlikely that they will consider contributions to be like investments in pension funds. The link between contributions and benefits should be transparent, easy to grasp, and perceived as stable by citizens. Workers should be informed about their benefit entitlements (for example, accrued pension rights).

Finally, welfare benefits should be separated from insurance benefits, and funded out of general revenues. Governments should make an effort to explain the new rules to citizens.

**Table 18.4. Incentive to Postpone Retirement by One Year**

<i>Last year of work (age)</i>	<i>Replacement % rate</i>		<i>Accrual % rate</i>		<i>Marginal % tax rate</i>	
	1992	Post 1995	1992	Post 1995	1992	Post 1995
55	63.8	n.a.	-1.4	-1.9	16.9	14.9
56	65.6	n.a.	-1.8	-2.2	22.7	18.1
57	67.4	46.3	-2.0	-0.5	25.7	4.4
58	69.2	48.2	-2.3	-0.8	29.0	6.3
59	71.0	50.2	-2.5	-0.8	31.8	6.8
60	72.9	52.3	-2.7	-0.4	35.2	3.7
61	75.1	54.7	-3.0	-0.7	38.8	6.3
62	77.0	57.0	-3.2	-1.3	41.7	11.4
63	78.8	59.3	-3.5	-1.7	45.0	15.9
64	80.9	62.2	-3.8	-2.2	49.0	20.2
65	80.9	62.8	-5.8	-4.6	74.6	43.2

Source: Brugiavini 1998.

Note: n.a. = not applicable.

To sum up, several factors may reduce the impact of the rules introduced in Italy in 1995 on the behavior of individuals:

1. An important component of the workforce is not affected by the reform.
2. There is a gap between the effective contribution rate and the (higher) imputed rate used in the computation of benefits.
3. As there is public awareness that long-term financial equilibrium has not yet been reached, young workers may expect that further changes will be introduced and therefore may have the perception that the return to their contributions is uncertain.<sup>46</sup>
4. Governments have not undertaken any extensive effort to explain the functioning of NDC; only recently have individuals been receiving a statement of their contributory account presenting their future pension entitlements.
5. There is some lack of clarity about the way the system works. No official document has explained the working of the new system; the formula underlying the conversion coefficients has not been officially published,<sup>47</sup> and the methodology envisaged for the revision of the coefficients has not been specified.

Any effort to fully implement the NDC system in Italy and reap its microeconomic benefits would require progress on all these fronts. In particular, it would require significant reforms bringing to an end the continuous debate on the need for further changes in legislation. This in turn requires full hedging of the system against macroeconomic and demographic shocks. It would also require an extensive public debate about the benefits of the system and the way it works.

### Policy Options: A Long Menu

Several proposals for further reforms have been formulated in recent years. They can be classified in three broad categories: (1) implementing the changes envisaged by the 1995 reform earlier than planned, (2) tightening the steady state eligibility rules established by the 1995 reform, and (3) accelerating the development of the funded pillar.

**1. Speeding the 1995 reform.** The transition to the new regime can be accelerated by the extension to all workers of the formula introduced in 1995 and by the elimination of de facto seniority pensions.<sup>48</sup> These proposals are technically simple, since they do not call into question the architecture of the pension system. However, they are politically sensitive, since they immediately affect a large number of older workers.

**2. Tightening the steady state eligibility rules.** Several modifications of the 1995 regime have been contemplated in the large number of studies that have recently examined the reform.<sup>49</sup> The extensive ex post analysis of the reform is in stark contrast to the lack of preparatory work. Among the main proposals are:

- A reduction of current coefficients and a shift in the old-age retirement bracket (for example, from 57–65 years to 62–70 years)<sup>50</sup>
- A steeper curve of conversion coefficients, providing an incentive to postpone retirement<sup>51</sup>
- More frequent revisions of the conversion coefficients and an increase in the number of factors considered in the revision of the coefficients, to broaden the range of shocks taken into consideration
- The indexation of contributions to the rate of growth of wages rather than to the rate of growth of GDP
- A reduction in the pensions awarded at retirement associated with the introduction of an adjustment to real GDP growth or real earnings dynamics that takes into account the demographic and economic changes<sup>52</sup>
- A separation of the contributory rates for the old-age pension from those for disability and survivors' pensions. In the case of the survivors' pensions, one can also consider offering different insurance options to the individual.

These changes would increase the effective retirement age and shift the focus of expenditure control from the reduction of replacement ratios to the reduction of the ratio of pensioners to workers.<sup>53</sup> They would remove any implicit tax on continuing work and take the negative externalities of retirement on public accounts into consideration. The margins for this policy action are very large: in 2000, the average retirement age was about 58 years for private sector workers and 60 for public sector workers; in 1998 about 25 percent of pension expenditure was paid to individuals below 65 years.<sup>54</sup>

The modifications considered above would ensure the financial equilibrium of the pension system. In conjunction with a greater role of funded schemes, they would also allow a reduction of the PAYG contribution rate while still guaranteeing high replacement rates to workers with long contributory periods.

**3. Accelerating the development of the funded pillar.** Several recent studies<sup>55</sup> have considered the transition from the current situation, in which the overall contributory rate is about 40 percent (33 percent for the PAYG scheme plus at least 7 percent for the severance-pay funds or the supplementary schemes), to a situation in which the PAYG contribution rate is 23 to 25 percent and the supplementary funds have a contribution rate of 7 to 10 percent. The simulations show that even under prudent assumptions about the returns of funded schemes, the PAYG and supplementary pensions would altogether guarantee relatively high replacement rates to individuals retiring at 65. However, they show that there is a tradeoff between the benefits of a larger share of funding and the budgetary cost of the transition. For this reason, several studies suggest reducing PAYG contributions for new entrants in the labor market only. The government would have to finance a deficit that would peak after 40 years at about 2 percent of GDP. The budgetary cost of the transition would be substantially reduced if the payroll tax reduction induced positive effects on labor productivity and employment.<sup>56</sup>

In conclusion, there is considerable consensus among pension experts that a comprehensive package including a faster implementation of the 1995 reform, some parametric changes in the pension regime established by that reform, and an acceleration of the development of funded schemes would avoid the expected rise of the pension expenditure to GDP ratio and reduce the negative effects of the systems on the labor market and employment. The acceleration of the implementation of the 1995 reform would provide some budgetary margins for a gradual reduction of the contributions to the PAYG system, which could be implemented in parallel with the development of funded schemes. Pension reforms could be supplemented by reforms in the labor market, such as changes in the age profile of wages, more training for elderly workers, and more flexibility in work arrangements.<sup>57</sup>

The optimal mix of PAYG pensions and funded pensions remains open to discussion. However, high present contribution rates and budgetary constraints limit the speed of the transition to funding. It is likely that the Italian pension system will remain for a long time predominantly based on PAYG criteria.

### The Future of NDC in Italy

A reflection about the future of notional funding in Italy requires an analysis of the factors underlying its introduction in 1995 and of the current critical aspects.

#### *An Excessively Fast Introduction*

The actuarial approach underlying the 1995 reform represents a structural break in Italian pension policy making, since in previous decades actuarial considerations did not have any significant role.<sup>58</sup> The change is quite remarkable, since most of the potential benefits and distributive effects of the new defined contribution system could have been achieved by adapting the old defined benefit system.<sup>59</sup> The break came without an extensive debate about the usefulness of defined contributions and NDC, so it cannot be claimed that it reflected a change in the policy views of policy makers, experts, and the general public. The philosophy of NDC is actually still widely misunderstood in Italy.

The introduction of a new pension formula is sometimes used to make cuts in benefits more acceptable than explicit changes in the old pension parameters.<sup>60</sup> However, this does not apply to the 1995 reform, which—despite the introduction of a completely new formula—did not reduce future pension spending with respect to the 1992 reform.

The introduction of a new pension formula could have also have been an opportunity to explicitly signal the change in the incentive structure. However, in the absence of a relevant effort to explain the changes to the general public, this justification of the reform does not seem convincing.

It is likely that political considerations were the main factors underlying the introduction of this reform. The reform was introduced after a short preparation period following the fall of the center-right government, which had tried to introduce a parametric reform in the second half of 1994. The new government was committed to introducing a pension reform: NDC, joined with a generous transitory phase, provided the chance of introducing a significant reform without modifying the pension entitlements of elderly workers, who are overrepresented within trade unions and in parliament. For trade unions, the reform may also have represented a solution that allowed the preservation of the PAYG system and reduced the regressive redistribution in favor of workers with rising earnings.

Although the new Italian system shares several elements with the Swedish system, the political process that led to the 1995 reform is in stark contrast with the Swedish experi-

ence. Legislation was passed a few weeks after the bill was discussed within the cabinet.<sup>61</sup> The new pension regime was introduced without the publication of a report outlining the different options and examining in detail their implications for the labor market and the future economic situation of pensioners. Although the lack of adequate preliminary work was understandable in the aftermath of 1992 exchange-rate crisis, it was less so in later years, when the focus shifted from expenditure control to a wider range of objectives. Gronchi and Aprile (1998) relate some deficiencies of the 1995 reform to the swiftness of its introduction, which prevented the analyses and discussions necessary to fully understand its implications.<sup>62</sup>

The sudden introduction of the reform also prevented an adequate analysis of its financial implications. The effects of the reform on expenditure trends were examined in a report released by the treasury budget office in June 1995.<sup>63</sup> According to this report, the reform would have reduced pension expenditure. The equilibrium contribution rate of the private employees' pension scheme rate was forecast to be slightly lower than in the pre-reform scenario.<sup>64</sup> The incidence of spending on GDP was expected to decline from 7.3 percent in 1995 to 6.3 percent in 2010, then rise to 7.0 percent in 2030. Similar results were derived for the self-employed schemes. Surprisingly, however, these results were significantly modified in the next report released by the same body, which set out a markedly worse baseline scenario.<sup>65</sup> In that second report, spending for private employees' pensions was projected to rise from 8.3 percent of GDP in 1995 to 8.4 percent in 2010 and to 9.8 percent in 2030. Total spending by all the main pension schemes was projected to rise from 13.6 percent to 14.1 percent and to 16.0 percent, respectively. From a technical point of view, the changes in the estimates largely depended on the models used for projecting the reference population.

The lack of preparatory work and the above-mentioned political considerations also shaped the design of the reform. First of all, the reform avoided showing cuts on replacement rates at retirement. The conversion coefficients were computed assuming a rate of return of 1.5 percent after retirement on accumulated contributions. Expenditure control was essentially achieved, albeit not evidently, via price indexation. As already mentioned, over a long retirement period this solution may lead to pressures for discretionary increases of benefits.<sup>66</sup> The reform also postponed the first revision of conversion coefficients until 2005, and envisaged an extremely long and complex transitory arrangements that substantially exempted a large portion of Italian workers from notional funding. Altogether, these decisions contributed to shifting political tensions far into the future.

Even more surprisingly, the formula used in computing the conversion coefficients has never been published. This contributes to making the future revision of coefficients more problematic.

The fact that the philosophy of NDC was not fully understood by policy makers shows in some solutions adopted in 1995 and in the following years. Some exceptions were introduced in the actuarial approach underlying the 1995 reform: the gaps between actual and imputed contribution rates introduced in 1995 are in stark contrast with the NDC approach. The situation did not improve in the following years: the new pension reform project submitted to parliament in December 2001 envisaged a reduction by 3 to 5 points of the contribution rate to be paid by employers for new entrants in the labor market, but without any change in pension benefits. In 2004, as already mentioned, the minimum age of retirement for men in the new NDC system has been raised to 65 years without changes in the conversion coefficients. This implies disregarding one of the main aspects of the 1995 reform: that of allowing some flexibility in the choice of retirement age within an actuarial regime. Finally, the first revision of conversion coefficients, which is expected to

be significant in view of the increase in life expectancy, is not likely to take place in 2005 as envisaged in the 1995 reform.

In the end, Italy has an NDC system that is not yet perceived by the policy makers and the general public as fully operational, that cannot yet provide its expected microeconomic benefits, and that requires sizeable adjustments of rules and parameters to remain sustainable. Moreover, so far no significant effort has been made to inform each citizen about his or her own notional fund. The revolution of notional funding is still largely unfinished.

### *The Need to Make a Clear-Cut Choice*

As to the future, it would be advisable to either fully implement the NDC system or explicitly move to other solutions.

The first solution would require the introduction of procedures and parameters ensuring the sustainability of the NDC system. In particular, it would require the changes considered in the section on policy options: the reduction of current coefficients; a shift in old-age retirement bracket; more frequent revisions of the conversion coefficients and an increase in the factors considered in the revisions; the indexation of contributions to the rate of growth of wages; the use of indexation procedures to preserve the balance of the system; and the separation of old-age, disability, and survivors' pensions. Extensive efforts to explain the functioning of the NDC system to citizens would also be required.

The benefits of NDC systems in terms of allocative efficiency have been mentioned above. Moreover, NDC can increase the transparency in redistribution and can allow the introduction of self-equilibrating mechanisms. Notional accounts may also allow the integration of pensions and other social protection schemes, thereby giving citizens some flexibility in managing their social security wealth.<sup>67</sup>

However, some factors may favor adopting other solutions in Italy.

First, one may doubt the optimality of coupling a PAYG defined contribution system and a large funded defined contribution system, while leaving redistribution to a third welfare pillar. If contribution rates to PAYG pensions are significantly scaled down and benefits are accordingly reduced as considered in the studies mentioned in the section on policy options, the level of many pensions would be close to the minimum income guaranteed to all citizens. The incentive effects of the link between contributions and benefits would be somewhat weakened. To limit this effect, it would be necessary to raise the minimum age—which is currently 65—for qualifying for a minimum welfare pension. This solution might be socially unacceptable.

Second, PAYG pension rights are not usually embodied in formal contracts. The government can modify both the timing and the amount of the payment. Although failure to repay financial liabilities may give rise to legal claims and political reactions, the repudiation of PAYG pension liabilities may raise only the latter. The introduction of NDC reduces the possibility of defaulting pension rights and introducing further pension reforms. Although this aspect of NDC reforms can in principle be positive because of the greater certainty of individuals, it is highly problematic in the Italian case. The size of the pension liabilities resulting from the choice of the NDC parameters in 1995, combined with the dramatic demographic trends, is such that it is highly unlikely that the corrections can take place in a single step.<sup>68</sup>

Although these factors mostly apply to Italy, one can also question whether in a fast evolving economic and demographic situation, which may require substantial continuous changes in the rate of return on contributions to ensure the sustainability of the system, the microeconomic benefits expected from strengthening the contribution-benefit link can actually be achieved.<sup>69</sup> Individuals may consider that the returns on their contributions are anyway rather uncertain. A more traditional PAYG scheme would, at least, appear to provide greater certainty to individuals concerning their replacement ratio.

However, the choice between either approach may primarily depend on political considerations. In the end, whatever solution allows the formation of a political consensus for further reforms that postpone retirement, avoid increases in spending, and conclude the lengthy reform process may be preferred.

## Conclusions

The reforms introduced in the 1990s significantly changed the outlook for the Italian pension system. Prospective expenditure growth has been contained. The harmonization of the different schemes is well under way. The incentives for early retirement have been reduced.

The reform process is not yet completed. Significant parametric changes in the pension regime established in 1995 are necessary in order to avoid further increases in the equilibrium contributory rate. The rules applying in the transition may have to be tightened to reduce spending in the medium term. An increase in the effective retirement age is necessary to shift the focus of expenditure control from the reduction of replacement ratios to the reduction of the ratio of pensioners to workers.

But there is also a need for a decision concerning the general framework of the Italian pension system. NDC has been introduced but has not been fully implemented. Some recent reforms are not consistent with the underlying philosophy of an NDC plan. This situation risks giving Italy the problematic aspects of NDC systems (complexity, explicit pension liabilities) without its benefits (microeconomic effects, self-equilibrating mechanisms).

Both policy makers and experts seem unwilling to reopen the debate on the grand design of the system. This probably is because of a certain reform-fatigue, which suggests that focusing on a more concrete step-by-step approach would be more effective. However, without some explicit decisions, the emerging NDC scheme is likely to evolve incrementally in a different regime.

This chapter argues that either NDC must be fully implemented—including the introduction of procedures and parameters ensuring its sustainability and including extensive efforts to explain its functioning to citizens—or it would be advisable to move to another solution, along the lines of a more traditional PAYG system. The latter system could retain some features of NDC systems, such as reference to the lifetime work record and retirement flexibility on actuarial basis.

Whatever the decision concerning the future design of the pension system, it would be highly advisable that it be the result of an open debate and an extensive analysis.

## Notes

1. See Ministero del Lavoro (2002).
2. See Morcaldo (1977) and Ministero del Tesoro (1981).
3. See Banca d'Italia (1991) and Franco and Frasca (1992).
4. See Ministero del Tesoro (1994) and Padoa Schioppa Kostoris (1995).
5. See Franco et al. (1994).
6. Brugiavini (1998) estimates that the net tax rate on postponing the retirement age by one year monotonically increases from 25.7 percent at the age of 57 to 74.6 percent at the age of 65.
7. In 1990, only 32 percent of individuals 55 to 64 years old were employed. In 1995, this percentage was down to 27 percent and was far below the percentages recorded in most other Western countries.
8. See Gronchi and Aprile (1998).
9. See Castellino (1996) and Peracchi and Rossi (1998).

10. The poverty rate for households headed by individuals older than 65 had steadily declined over the 1970s and 1980s (Cannari and Franco 1990). These trends continued in the following years (Cannari and Franco 1999; Baldacci and Inglese 1999).

11. See Franco (1993), Vitaletti (1993), and Ferrera and Gualmini (1999).

12. Moreover, in order to immediately restrain public expenditure, the adjustment of pensions to price dynamics was temporarily limited and the disbursement of new seniority pensions was curtailed.

13. Past earnings were revalued at a rate equal to the rise in the cost of living plus 1 percentage point per year.

14. Seniority pensions allowed workers to retire at any age provided they had a minimum contributory period, which was 35 years in the private sector and 20–25 years in the public sector (with a minimum as low as 16 years for certain categories).

15. These estimates refer to the present value of pensions to be paid in the future on the basis of accrued rights to pensioners and existing workers, net of the contributions that the latter will pay under current rules.

16. In spite of the 1992 reform, INPS expected the equilibrium contribution rate for private sector employees to remain stable at its 1995 level (49 percent) (the projections are reported in Senate of Italy 1995). According to Ministero del Tesoro (1996), this rate would decline from 47 percent in 1995 to 42 percent in 2010 and then increase to 46 percent in 2030. The equilibrium contribution rates of the schemes for the self-employed workers were also revised upward.

17. As is well known, a similar reform was discussed in Sweden in 1994 and introduced in the following years. For a comparison, see Gronchi and Nisticò (2003).

18. See Aprile, Fassina, and Pace (1996), Banca d'Italia (1995), Castellino (1995), Padoa Schioppa Kostoris (1995), Peracchi and Rossi (1998), Rostagno (1996) and Saraceno (1995).

19. The eligibility requirement set by the 1992 reform (of 20 years of contributions) encouraged evasion by those workers who expected they would never reach the minimum service requirement.

20. The 1995 reform also provided for the partial indexation to real wage growth of pension up to 10 million lire per year (about 5,000 euros). The provision is to be applied from 2009, with both a ceiling and procedures still to be indicated.

21. The 1995 reform did not contribute to the reduction of expenditures in the long term. Rostagno (1996) estimates that this reform increased the liabilities of the private sector employees pension scheme by 4 to 9 percent of GDP depending on the rate of growth of GDP (the higher GDP growth, the greater the increase in liabilities, since—contrary to contributions of the pre-1995 regime—contributions are adjusted to GDP growth).

22. See Sartor (2001).

23. The table refers to the ratio of the average effective pension at the age of 60 to the initial wage rather than to the more traditional replacement rate (the ratio of pension benefit to the last salary). This is because the former ratio provides a common basis for assessing the characteristics of two pension regimes characterized, *inter alia*, by different contributory periods for retirement.

24. See Cardarelli and Sartor (2000).

25. The continuous aging of the Italian population is mainly the result of Italy's very low fertility rate and, to a minor extent, its increase in life expectancy. The Italian fertility rate has been below replacement since 1977; since 1993 it has been below the 1.3 threshold (considered by U.N. demographers a critical threshold); it reached its minimum value of 1.18 in 1995.

26. The pensions paid to individuals in the pro rata regime will be computed on the basis of two components: the pre-1995 contributions and the contributions paid from 1995 onward.

27. See Porta and Saraceno (1997).

28. The sharp difference in the treatment of workers who in 1992 and 1995 had small differences in contributory records also raises an equity problem (Commissione ministeriale per la valutazione 2001).

29. See Sartor (2001).

30. The budgetary effects of the 1995 reform and of the measures introduced in the following years have been examined in Commissione ministeriale per la valutazione (2001). The overall expenditure cuts were broadly in line with the early estimates.

31. According to INPS (1998) projections, the equilibrium contribution rate of the private sector employees' pension fund will rise from 45 percent in 2000 to 47.8 percent in 2010 and 48.5 percent in 2025. The corresponding rate of the artisans' pension scheme is projected to increase from 21.3 percent to 28.2 percent and then to 30 percent, and that of the shopkeepers' pension scheme from 18.5 to 25.4 percent and then to 33.9 percent.

32. See Commissione ministeriale per la valutazione (2001).

33. The decision taken in 2004 to increase the minimum retirement age to 65 years for men and to 60 years for women would evidently reduce the number of pensions and increase the average pension. However, the abolition of any flexibility for men combined with the preservation of the conversion coefficients introduced in 1995 does not seem an optimal and sustainable solution.

34. See Brugiavini (1998).

35. See Palmer (1999).

36. See Aprile, Fassina, and Pace (1996).

37. See Banca d'Italia (1995), Castellino and Fornero (1997), and Giarda (1998). This solution would have been in contrast with the government's objective of ensuring that individuals retiring at 62 after 37 years of service would get the same replacement rate that they accrued before the reform.

38. See Peracchi and Rossi (1998) and D'Amato and Galasso (2001). The Ministero del Tesoro (2000) estimates that if pensions were adjusted to increases in real wages from 2005 onward, the ratio of pension expenditure to GDP would be 2 percentage points higher than in the baseline scenario in 2015 and more than 3 points higher in 2030.

39. See Aprile, Fassina, and Pace (1996), Rostagno (1996), Hamann (1997), Gronchi and Aprile (1998), and Sartor (2001).

40. See Settergren (2001).

41. Baldacci and Tuzi (1999) estimate that the new mortality ratios would already imply a 1 percent cut in the benefits paid to those retiring at 57 and a 3 percent cut for those retiring at 65. Caselli et al. (2003), on the basis of the 1997 life tables, point to cuts respectively of 2.5 percent and 3.7 percent for the same age groups. They estimate that the mortality rates considered in the baseline demographic scenario of the National Statistical Office imply a reduction of 8.9 percent for those retiring at 57 and a 11.8 percent for those retiring at 65.

42. The need for a built-in equilibrating mechanism operating via the indexation of pensions was highlighted in a study carried out at the end of 1994 for the main parliamentary group supporting the reform (Aprile, Fassina, and Pace 1996). For instance, the study advocated the introduction of a coefficient offsetting the effects of changes in working-age population.

43. The usefulness of the solution of considering survivor benefits to be welfare benefits payable by the government is questionable, since providing a guaranteed minimum pension to disabled workers and survivors may be considered a component of social insurance, particularly as the contribution rates are relatively high (Giarda 1998).

44. See Gronchi and Aprile (1998), Giarda (1998), and Nicoletti-Altinari and Rostagno (1999).

45. See Orszag and Snower (1999).
46. This perception has been reinforced by some measures taken in recent years to curtail pension expenditure.
47. See Gronchi (1997).
48. See Giarda (1998), Ferraresi and Fornero (2000), and Fornero and Castellino (2001). The changes introduced in 2004 move in this direction.
49. See Commissione per l'analisi delle compatibilità macroeconomiche della spesa sociale (1997), Giarda (1998), Gronchi (1997 and 1998), Gronchi and Aprile (1998), Hamann (1997), Padoa Schioppa Kostoris (1996), Peracchi and Rossi (1998), Angrisani et al. (2001), Fornero and Castellino (2001), Sartor (2001), and Franco and Marè (2002).
50. It has also been suggested that (1) effective contribution rates should be equal to the rates taken into account to determine the accumulated contributions, (2) disability and survivor's pensions should be fully financed out of the contribution rate, and (3) any residual restriction to the cumulability of pension and labor income should be abolished. The abolition of the retirement bracket for men decided in 2004 is not an optimal solution: it reduces the flexibility allowed to individuals without significantly curtailing spending.
51. Brugiavini and Peracchi (2003) show that there are significant margins to increase the incentive to postpone retirement. They estimate that a hypothetical regime characterized by a 6 percent increase of benefits per year of delayed retirement (which they define as actuarial adjustment) would generate a sizeable increase in employment rates compared with the 1995 reform regime, especially after age 60.
52. This solution would reduce the political pressure for discretionary increases of pension in real terms stemming from sizeable disparities among pensioners depending on the year of retirement. It would also introduce a second built-in equilibrating mechanism in the system: adjustments in the conversion coefficients would offset the effects of changes in life expectancy, and the indexation mechanism would take cyclical aspects and birth-rate changes into account. These devices, which were considered in the preparatory work for the reform (see Aprile, Fassina, and Pace 1996), would make the pensioners share the burden or take advantage respectively of negative and positive shocks. See also Giarda (1998) and Gronchi (1998).
53. This strategy is in line with the policy response to population aging advocated by the European Commission and the Organisation for Economic Co-operation and Development (OECD), which is centered on increasing the average number of years individuals spend active in the labor force and on guaranteeing adequate income to pensioners. See European Commission (2002) and Visco (1999).
54. See ISTAT (2000).
55. See Castellino and Fornero (1997), Brambilla and Leoni (1998), Brugiavini and Peracchi (1999), Forni and Giordano (2001), and Fornero and Castellino (2001). See also Amato and Marè (2001) and Messori and Scaffidi (1999).
56. Modigliani and Ceprini (1998) take a different approach and suggest a gradual transition to a fully funded system. The funded scheme would operate on defined benefits criteria with the government guaranteeing a minimum rate of return on assets and benefiting from returns above this minimum.
57. See Marano and Sestito (2004).
58. See Castellino (1996).
59. See Cichon (1999). The equalization of yields on contributions and the strengthening of the link between contribution and benefits could have been achieved by applying the same pension formula to all categories, computing pensions on the basis of lifetime earnings and introducing an actuarial discount of benefits in relation to the age of retirement.

Gronchi and Nisticò (2003) point to the different implications of the defined benefit and the defined contribution solutions.

60. See Pizzuti (1998).

61. Giarda (1998) notes that the complex technicalities of the NDC system had to be understood and implemented into legislation in about two months.

62. See also Aprile, Fassina, and Pace (1996).

63. See Ragioneria Generale dello Stato (1996a).

64. The contribution rate was estimated to be 40.2 percent rather than 42.2 percent in 2010 and 44.8 percent rather than 46.2 percent in 2030. The estimates are based on a scenario in which GDP and total wage growth rate were 2 percent and the conversion rate was revised every 10 years. The expenditure projections for the self-employed schemes were examined in Ragioneria Generale dello Stato (1996b).

65. See Ragioneria Generale dello Stato (1996c).

66. Pizzuti (1998) remarks that this decision, which relies on the shortsightedness of individuals, is in stark contrast with one of the main roles of public action in retirement provision: that of compensating for this shortsightedness.

67. See Fölster (1999) and Orszag and Snower (1999).

68. As it is put by Boskin (1982): "I would not wish to have the current rules and regulations of the social insurance program cemented into a unified capital account of the government as if we had issued explicit long-term contractual debt obligations, that is, I do not want to enshrine pay-as-you-go financing of these programs and government activities at current projected levels" (p. 300).

69. See the more general point made in Tamburi (1999) about the need for periodic adjustments of pension provision.

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