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The Evolution of Incentives for Retirement in Italy, 1980–2015

Agar Brugiavini, Raluca Elena Buia, Giacomo Pasini, and Guglielmo Weber

6.1 Introduction and Motivation

The aim of this chapter is to explore and try to explain the increases in older Italian men and women's labor force participation (LFP) and employment over the past 20 years. This is a general pattern, common to most developed countries around the world, and many factors may have contributed to the recent increases in LFP and employment. These include changes in social security and disability insurance (DI) incentives, improving health and longevity, increasing education, a shift toward less physically demanding jobs, and rising female LFP (combined with the desire for joint retirement among couples).

The combination of high public debt and remarkably fast population aging prompted important changes in the Italian social security system. In fact, population aging in Italy poses important challenges to the public pension system for three reasons. First, Italian public debt is particularly high (over 130 percent of GDP), coupled with a particularly low GDP growth experienced in recent years; second, Italy has a low fertility rate, around 1.4 (its population is aging from below); third, Italians' life expectancy is among the highest in the world and rising (its population is aging from above). Given that the public pension system is basically a pay-as-you-go

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(PAYG) system, this combination calls for a substantial increase in LFP at all ages (see Brugiavini and Peracchi 2003 and 2007; Brugiavini, Pasini and Weber, 2017). Part of this increase may be obtained by encouraging female LFP (which is still relatively low in Italy compared to the US, the UK, or northern Europe), and part may be achieved by drawing in foreign workers (who compensate for aging from below). But there is no doubt that "aging from above" calls for longer working lives—and the very low average effective retirement ages experienced in Italy until two decades ago suggest there are major gains to be achieved by moving in this direction.

In light of these challenges, it is not surprising that the public debate has focused on how to increase the labor supply of workers in the 50 to 65 age group both by changing the incentives to retire and by introducing tighter conditions to be eligible for a public pension. Pension reforms have been implemented over the last three decades (starting in 1992), including a radical reform that was introduced in 2011 to ensure the sustainability of public debt and postponed retirement age—by a wide margin for several workers—without offering an easy transition out of the labor force. In particular, a relatively large number of workers who had agreed on a separation from the firm expecting to shortly retire on a public pension faced the prospect of long-term unemployment.

This chapter is organized as follows: we first provide some brief background on the trends in labor force participation in Italy; we then present the Italian pension system and main reforms in the last 30 years. Section 6.3 describes and analyses the financial incentives to retirement, while section 6.4 draws the main conclusions.

6.2 Employment Rates, Pathways to Retirement, and the Reforms Process

In order to provide a comprehensive view of the labor force trends prevailing in Italy, it is important to consider a sufficiently long time span: it is well known that many important changes took place during the 1970s and 1980s regarding the educational system, the welfare system, and the industrial structure of the country. As the underlying motivation of this chapter is to explain the patterns in labor supply and the role played by financial incentives, it is useful to first illustrate some facts about the Italian labor market. For comparability with the other chapters of this book, for later years, we take the data on labor force participation and employment rates from Organisation for Economic Co-operation and Development (OECD) statistics. However, the OECD database does not go back far enough in time—for earlier years, we gather the relevant information from the MARSS database provided by ISTAT (the Italian National Statistics Office).[1] As both datasets

1. The data sources are described in the appendix. We look at the years 1980–83 for the 55–59 age group and the years 1980–92 for the 65–69 age group.

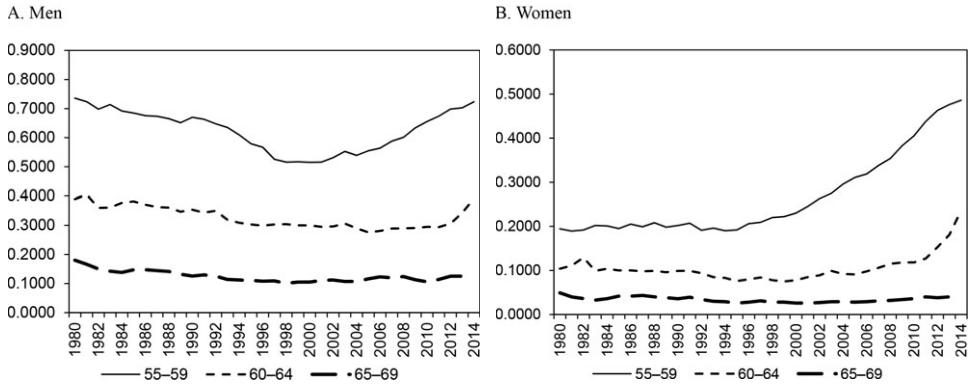


Fig. 6.1 LFP by age group, men (left panel) and women (right panel)

are based on the Labor Force Survey, we can safely link the two series.[2] Labor force participation (LFP) for older workers (grouped in three distinct age bands: 55–59, 60–64, and 65–69) is documented in figure 6.1 (left panel for men and right panel for women). There are clear gender and age differences. For men in the 55 to 59 age group, we observe a U-shaped pattern: a steady decline from 1980 until 1997, a stable pattern around 55 percent until the beginning of 2000, and then a substantial rise. The LFP of men aged 60–64 displays a slower but steady decrease until 2004 and a rather constant trend up to 2011, followed by a sharp rise afterward. A similar pattern emerges for the older age group, 65–69: LFP was as low as 20 percent in 1980 and decreased further to reach 11 percent in 2011. A modest increase of 2 percentage points occurs thereafter.

The pattern of LFP for women is markedly different, and it reflects the spectacular increase in labor market participation experienced by women all over the world in the second half of the 20th century. Still, some turning points are similar to what is observed for males.

The LFP of women aged 55–59 was equal to 20 percent in 1980 and remained almost unchanged until the end of the 1990s. The pattern changed in 1996: from that moment on, LFP increased at a fast pace, reaching values above 45 percent in 2011. In the next three years, LFP continued to increase, but its growth rate declined. As regards the 60–64 age band, only a small minority of women were involved in working activities until 2011: LFP hovered around 10–12 percent from 1980 until 2011. As we saw for males, 2011 is also a crucial year for females: starting in 2012, LFP starts to increase dramatically, reaching 24 percent in 2014. As regards older women (aged 65 to 69), less than 5 percent of them participate in the labor force throughout the period, with no relevant upward or downward trends.

2. Comparing the series for the overlapping period, they are almost identical.

The steady increase in education levels for both men and women, and in the number of workers affected by the tighter public pension eligibility criteria of both the 1990s pension reforms and the more radical 2011 reform, all contribute to explaining these patterns.

6.2.1 The Italian Pension System and Reforms

In what follows, we review the basic rules of the Italian pension system, which are relevant for the observed trends in the employment rate and the LFP rate of men and women in the 55–69 age group, stressing the institutional changes that took place over the last three decades. The main changes are also summarized in figure 6.2 in the form of a timeline of reforms.

Since 1969, the Italian public social security system envisaged two distinct retirement paths: an old-age pension and an early retirement (seniority) pension. Given the ease of access to and generosity of the public pension system, disability benefits or unemployment benefits have not been a common pathway to retirement in Italy.[3] Until 2011, eligibility criteria for both types of pension were based on the number of years of contribution and an age requirement. Before 1993, old-age benefits could be collected as early as 60 for men (55 for women), while early retirement (ER) pensions were granted irrespective of age, provided that at least 35 years of contribution had been paid into the system.[4] Pension benefits were earnings related and were computed as the product of the so-called *pension base* (E) obtained as average gross earnings over a five-year window before retirement and an accrual factor of 2 percent for every year of contribution (up to a maximum of 40 years). Thus a worker with average gross annual earnings of €30,000 and 40 years of contributions would retire with a gross pension of €24,000 (i.e., a replacement rate of 80 percent): quite a generous benefit. Given that earnings paid both income tax and pension contributions, while pensions paid only income tax, net replacement rates were even higher. Also, the ER benefits would not attract any actuarial penalty, even for very young retirees in their 50s, and pension benefits were indexed to nominal wage growth (this is referred to as "double indexation," as nominal wage growth is the sum of price inflation and average productivity growth).

In 1992, the Italian parliament approved an important reform of the public pension system that gradually increased the statutory retirement age from 60 to 65 for men and from 55 to 60 for women. It also changed the way benefits were indexed, by price inflation only, and changed the benefit computation pro-rata. In particular, the contributions paid by workers over their entire work history would be split into two parts: contributions paid before

3. Disability benefits have been of some relevance during the 1970s, but important changes to the award process took place in 1984, which made disability insurance basically negligible.

4. Some groups of workers could collect a pension at any age, having completed as little as 15 years of contributions.

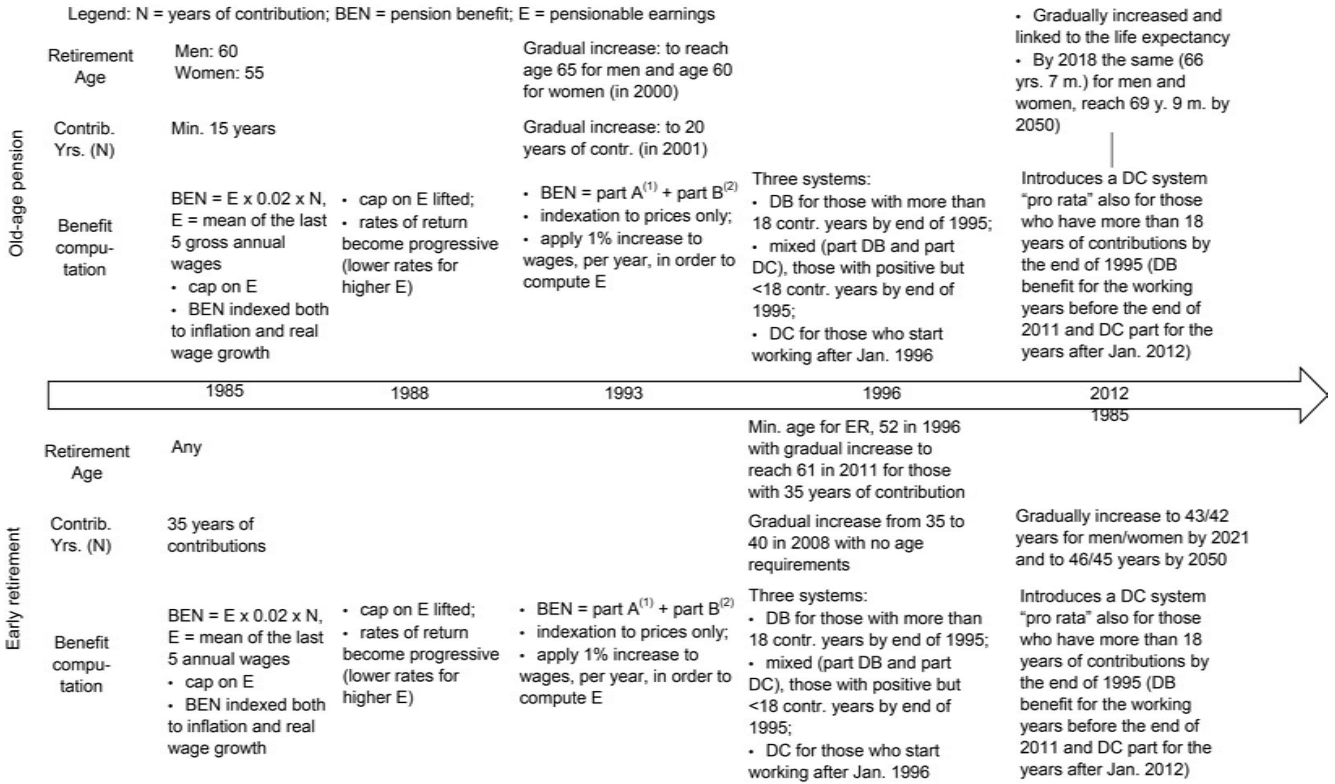


Fig. 6.2 Timeline of pension system reforms in Italy

1993 would be included in part A of the pension base; contributions paid since 1993 would be included in part B of the pension base. Part A of the pension base would produce benefits according to the pre-1993 rules. Part B of the pension base would produce benefits according to a different formula: benefits were computed as the product of a weighted average over a ten-year window before retirement and an accrual factor of 2 percent for every year of contribution after 1992. To compensate for the longer time period over which nominal earnings were averaged, past earnings were revalued at a 1 percent rate per year. Under the new system, the eligibility age for an old-age pension was increased gradually by one year of age every two years starting from 1994 until reaching age 65 for men and age 60 for women in the year 2000. The number of years of contribution required for an old-age pension was also increased gradually by one every two years starting from 1993 until reaching 20 years of contributions in 2001.

In 1995, a more radical reform was legislated that changed both the eligibility rules for early retirement and the calculation of old-age and early retirement pension benefits based on a notional defined contribution (NDC) system. These changes were characterized by a long transitional phase and a "grandfathering" approach, protecting the older cohorts of workers, which made them effective with a considerable delay. The transitional phase would be completed in 2032: by then, all retirees should receive a pension under the NDC system. In the interim phase, benefits are computed as a weighted average of the pension benefit resulting from the old regimes (parts A and B) and the new regime (part C) on a pro-rata basis. Early retirement pension eligibility ages were also gradually raised according to a formula that accounted for both age and years of contribution: thus a worker could take early retirement in the year 1996 if he was 52 years old and had accumulated 35 years of contribution. The age limit increased in such a way that in 2002 a worker would qualify at 57 years of age and with 35 years of contribution (for both men and women). It is worth pointing out that access to ER was also possible, independently of age, under the requirement that in 1995 a minimum contributive period of 35 years was satisfied. This requirement for ER increased over the sample period, reaching 40 years of contributions in 2008.

In 2011, the Italian government enacted an important reform that radically changed the calculation of benefits by implementing a more rapid convergence to the NDC system. Furthermore, eligibility for old-age pension became much tighter so that in the year 2018 there would be no difference between men and women, and by 2050 the age requirement would become 69 years and 9 months for all types of workers. Under the new regime, which is currently in place, retirees can still access the ER option, but a marked increase in the number of years of contributions needed for eligibility occurs: 42 (41) years for men (women) in 2012, which will increase up to 46 years for men and 45 for women by the year 2050.

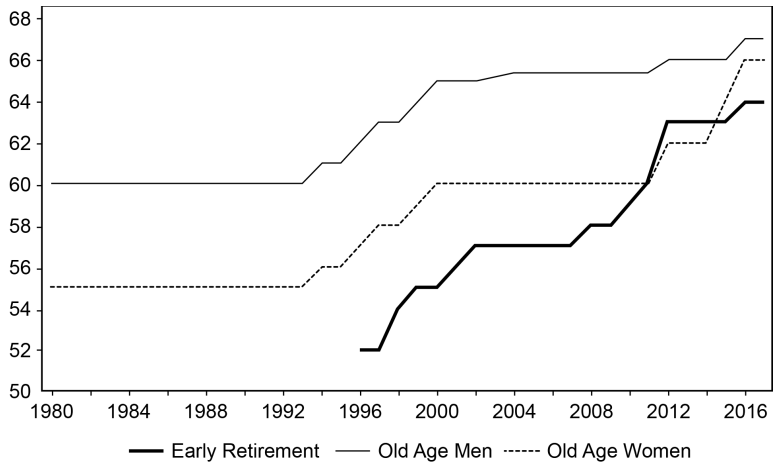


Fig. 6.3 Statutory and early pension eligibility ages in Italy by gender

Figure 6.2 presents the timeline of the main reforms of the pension system in Italy, while figure 6.3 shows the evolution of the statutory and early retirement ages over the last 30 years in Italy by gender.

An alternative source of information comes from the stock of social security benefits provided by the Italian social security administration INPS (Istituto Nazionale per la Previdenza Sociale). In terms of pathways, figure 6.4 shows the number of benefits by age group of the recipient using administrative data. Benefits can be old-age pensions, early retirement pensions, and disability pensions. The steady drop of benefits paid to the 55–59 age group (quite marked for men) largely reflects the coming into force of the 1990s reforms. The more dramatic fall in the number of recipients for the 60–64 age group starts immediately after the 2011 reform that curtailed the early retirement pension opportunities for both men and women in this age group and dramatically increased the statutory retirement age (especially for women). The number of benefits paid to the 65–69 age group is instead relatively stable over time, with a trough in 2011 and a peak in 2015. As we shall see, this apparent stability masks an important change in composition.

Figure 6.4 informs us about the stock of pensions paid out in any given year. Thus the benefit paid to someone aged 55 who retired and drew an early retirement pension in 2005 appears in 2014 for the 60–64 age group. In the next figure instead, we show how the stock is split among old-age pensions and early retirement pensions, which are the relevant ones in Italy.

Figure 6.5 covers the 1985–2016 period and is based on the data on the stock of beneficiaries aged 60–64 from INPS (up to 2004 the data refer to a representative sample of individuals, while from 2004 onward we have information on the entire stock of recipients).

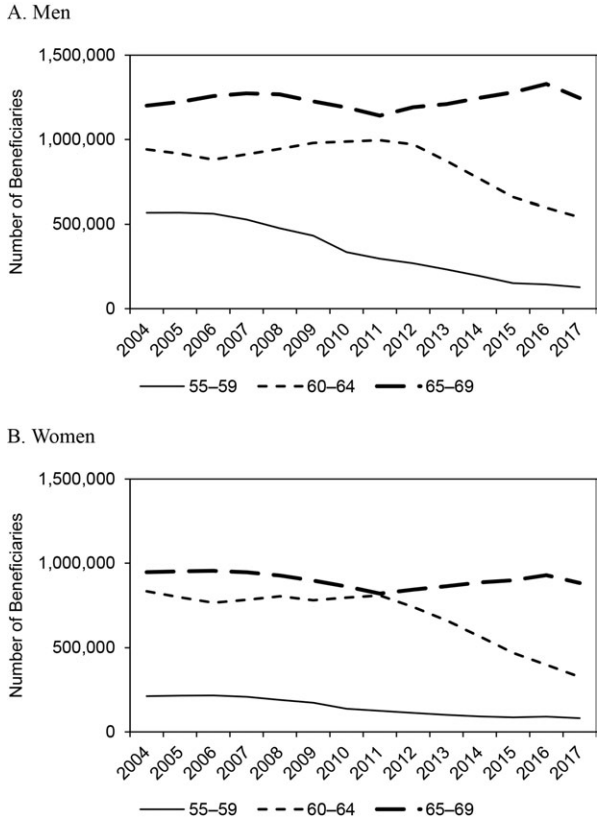


Fig. 6.4 Number of pensions by age group of the recipient
Source: INPS pension archive

The left panel shows that very few men could retire on an old-age pension at this age throughout the period. For women, instead, old-age benefits were the modal type until the late 1990s (as shown in the right panel). The early 2000s saw a major shift to early retirement pensions for women.

The sudden fall in the fraction of old-age pensions paid to women after the year 2000 calls for an explanation: pension eligibility ages varied a lot over the years, but statutory eligibility age for women reached age 60 in 2000 and was then stable until 2011.

This chapter will look at the financial incentives that kept changing over the years and may be partly responsible for the shift away from the old-age pension. One should also keep in mind that access to early retirement pension schemes may have increased as a result of the upward trend in female labor market participation, which implied that a growing fraction of women had enough years of contributions to qualify for an early retirement scheme.

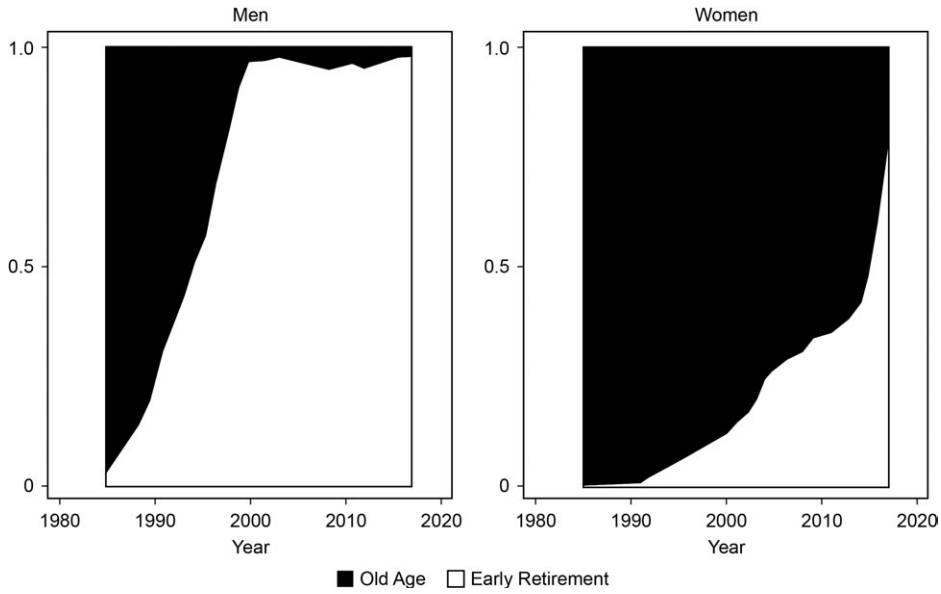


Fig. 6.5 Pathways to retirement by gender for the 60–64 age group
Source: Stock data from INPS pension archive

6.3 Financial Incentives

A first attempt at measuring the implicit tax for Italy was carried out in Brugiavini (1999); however, the changes following in the subsequent years and in particular the major reform in 2011 have heavily affected the dynamics of the relevant variables, hence making it necessary to provide a new set of estimates of the financial incentives. In this chapter, financial incentives for Italian workers and retirees are computed on the basis of the specific features of the Italian pension system each year and for each group and the relevant age-earnings profiles. A first set of results is based on gross values for the "common" European age-earnings profile of medium earners used throughout this book with the idea that this group of workers should correspond to the "median education" group in Italy. The calculations are then carried out for net values. This first round of calculations allows us to neglect any difference that may arise due to the peculiarities, if any, of Italian workers' earnings while focusing solely on the social security rules. In a second set of results, we make use of specific Italian data drawn from the Bank of Italy Survey of Income and Wealth (SHIW, several years). In this latter case, the results are closer to the actual experience of Italian workers, but they reflect a mixture of the social security rules and the patterns in earnings (figure 6.6).

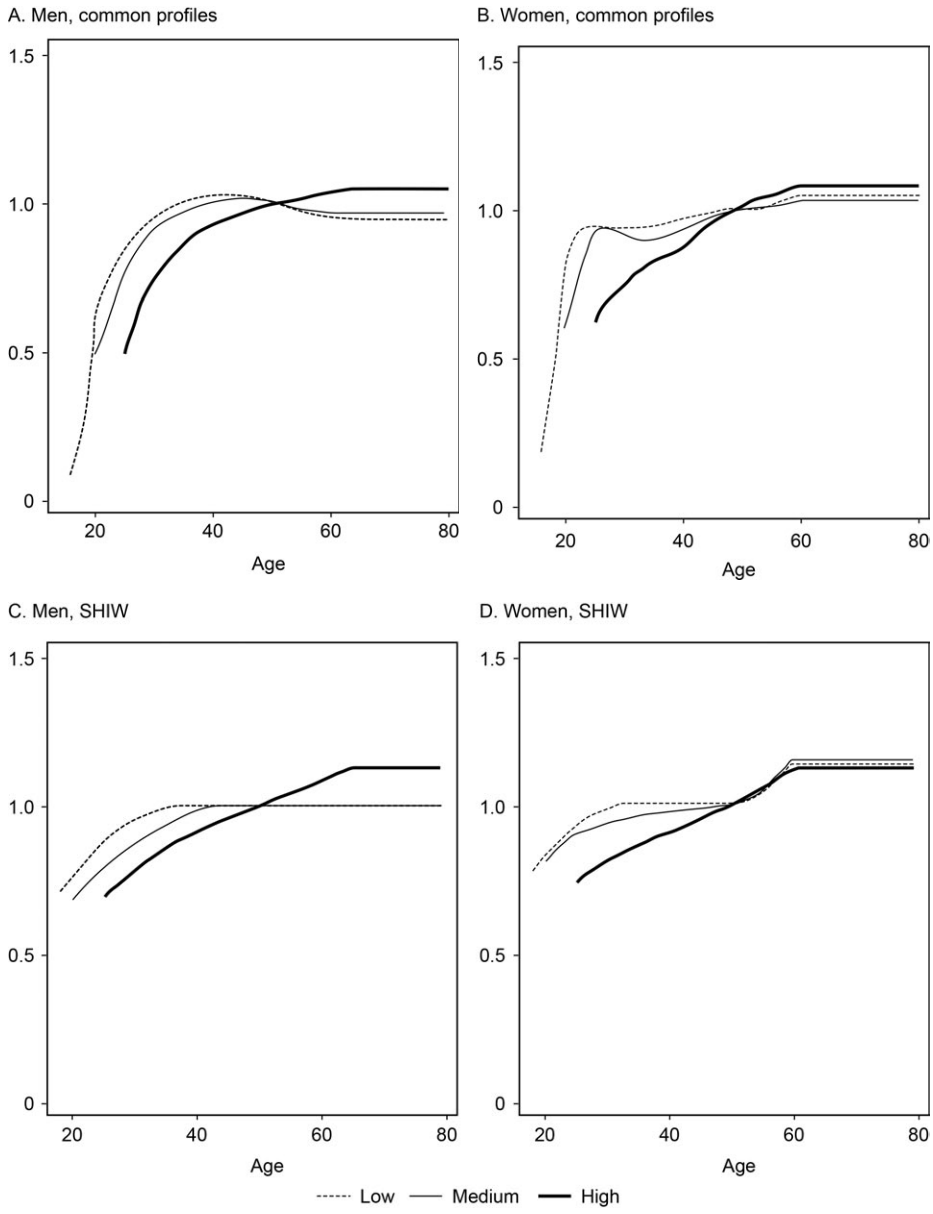


Fig. 6.6 Panels A and B, common profiles; panels C and D, SHIW
Source: Left panel, Italian profiles; right panel, SHIW

6.3.1 Middle-Income Men: Common Earnings Age Profile

The middle-income common earnings profile is characterized by continuous working careers starting at age 20. Earnings rise until age 47 and gently fall past age 50. This pattern is relevant in the Italian case, as the defined benefit rule adopted for much of the sample period largely reflects the last years of the working career.

Note that earnings profiles are in real terms. Hence, in our benefit computations, we do not take into account the prevailing inflation for each year. This is of some relevance, as a particular revaluation rule was introduced in 1993 to compensate for past price changes, inflating by 1 percent a year past earnings entering the benefit computation on top of the standard price indexation. Given that the earnings we use are already in real terms (i.e., they are already 100 percent compensated for inflation), the revaluation "artificially" increases benefits as it overcompensates for inflation. As a result, the replacement rates we compute increase in the later years because a growing share of the pension benefit is affected by this rule (the share of part B increases).

Another preliminary point is that the "gross to net" calculation and the "net to gross" grossing up of earnings (both common earnings profiles and earnings based on SHIW data) have been carried out consistently with the Italian pension rules. First, social security benefits are based on the average of past gross earnings (the pension base), where earnings are gross of income taxes and social security contributions paid by the employee, albeit net of the employer's contribution. Similarly, net earnings are obtained starting from the above gross earnings by subtracting employee's contributions and then income taxes. Finally, social security benefits only attract income taxes.[5] In our analysis, we used the same income tax rates both for earnings and for pension benefits, differentiated by three levels of income (67 percent, 100 percent, and 167 percent of the average income).

In figure 6.7a we show the financial incentive indicators for middle-income men aged 55–59. Given that the statutory retirement age was 60 or more throughout, we only show the incentives for early retirement. The gradual increase in early retirement pension eligibility age over the years is apparent in all graphs: all "55 years old" lines disappear after 2000, the "56 years old" lines disappear in 2006, and so forth. In fact, as of 2011 no man aged less than 60, characterized by the common medium age-earnings profile, could retire and claim a pension in Italy. Note that a person who retires from work at age 59 receives his first benefit when he is 60 years old. It is also important

5. The tax rates were computed as the mean of the values in the years 2000, 2005, 2010, and 2015 based on the data on average personal income tax from OECD. Note that following the assumption of this book, the tax rates are drawn from OECD and refer to incomes as percentages of average wages: we apply the same tax rates to all income values. In the Italian case, we make use of the relevant income tax rate and, separately, the corresponding employee's contribution rate.

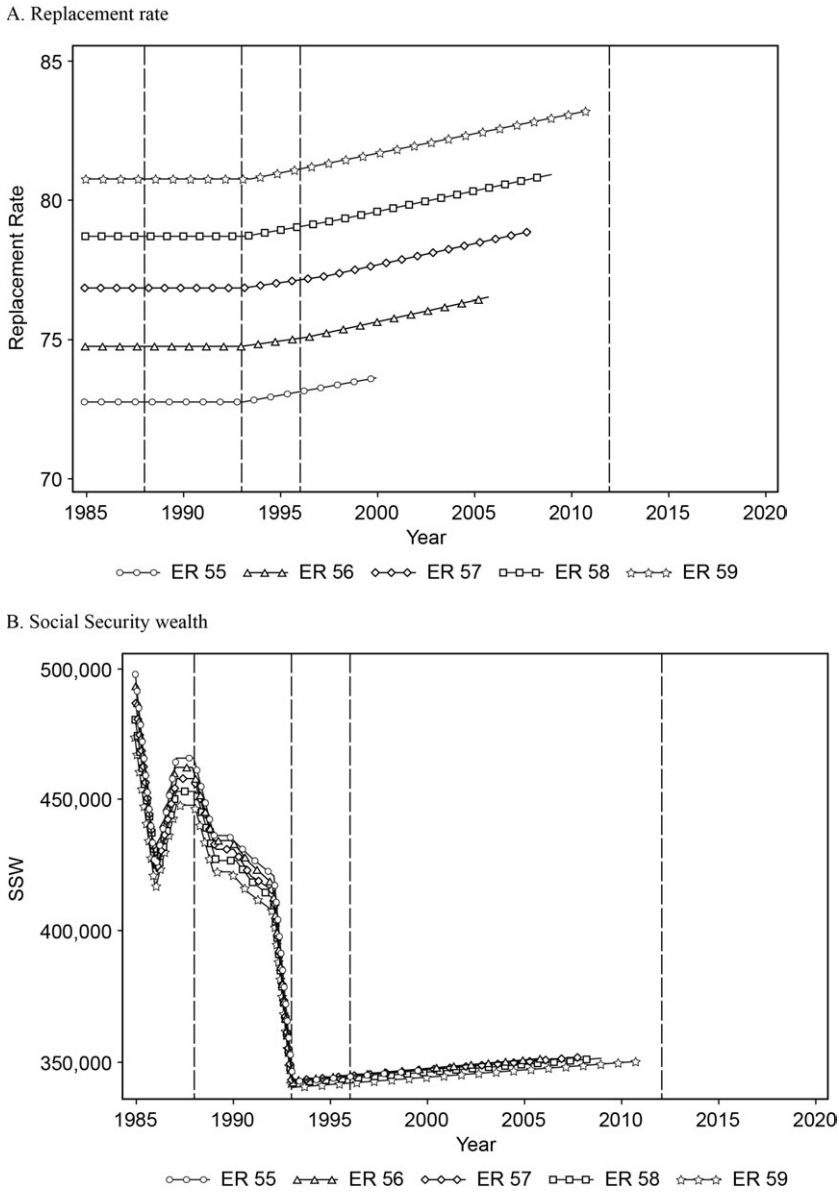
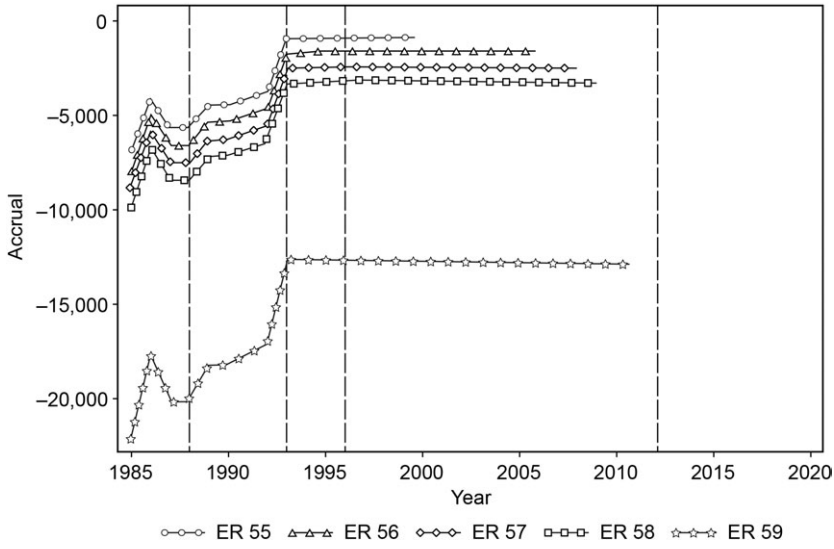


Fig. 6.7a Financial incentives for men aged 55–59, medium income, common earnings profile (gross values)

Note: Vertical lines mark (major) pension reform years.

C. Accrual



D. Implicit tax rate

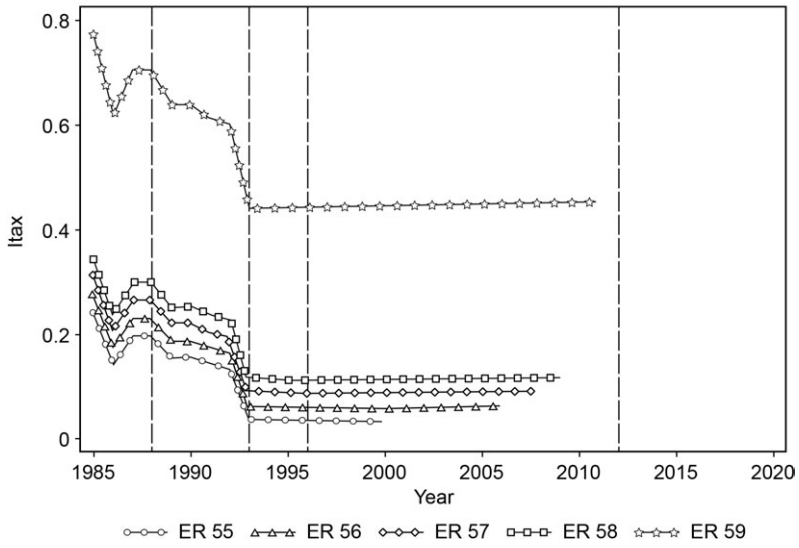


Fig. 6.7a (cont.)

to recall that while the benefit obtained through early retirement would be lower than a full benefit because the length of the working career (up to a maximum of 40 years) is part of the computation rules, no actuarial penalty was applied for early claiming. Hence early retirement benefits were typically lower than old-age benefits only because of the computation rules. It was also possible to observe early retirement benefits, which were "full benefits" if the worker contributed for 40 years or more toward his or her social security.

Panel A of figure 6.7a shows how replacement rates changed over the years for middle-income men aged 55 to 59. Replacement rates were stable before the 1993 reform, ranging between 73 percent for men aged 55 (who contributed for 36 years) and 81 percent for men aged 59 (as the latter had contributed four more years to the pension system). After 1993, replacement rates actually increased (albeit slightly) as a result of the way the first benefit was computed, as explained in section 6.1. In particular, the increase over time is due to the revaluation of past earnings at a 1 percent annual rate in the computation of the 10-year average of earnings that defines the pension base (part B). As we discussed above, this revaluation was meant to partly compensate retiring workers for inflation—as the pension base E now included 10 years of past nominal earnings. Given that the age-earnings profiles we use are in real terms, this revaluation mechanism appears to be beneficial to the newly awarded pensions, but this would not be the case over periods when inflation was high (as it was historically in Italy until the mid-2010s).

The social security wealth (SSW) panel shows social security wealth for men. SSW is computed on the basis of the prevailing legislation at the time the benefits are paid out: the basic assumption is that individuals do not have perfect foresight and cannot predict future reforms or future growth rates or tax rates. There are two distinct periods: pre-1993 and post-1993. During the pre-1993 legislation, benefits were indexed by using both a price index and real wage growth, which explains why SSW is much higher in the first half of the graph for all ages. The observed pre-1993 pattern is totally determined by the real-wage growth rate prevailing at each year of retirement, as this applies to all future benefits entering social security wealth. For example, the growth rate in 1985 was 3.0 percent, while the same rate in 1991 was 1.8 percent. Not surprisingly, in 1992 social security wealth steeply declines as a result of the change in the indexation rules. There is a second effect that should be considered: the earlier an individual retired, the longer the period in which pension benefits enjoyed full wage indexation, which explains why the 55-year-old line is above the 56-year-old line and so on before the year 1993, but the difference is negligible. The graph shows a slow increase for each retirement age after 1993 as a result of the rising benefit (and replacement rate) discussed above. Note that the replacement rates of retirees of the former group are lower than the corresponding replacement rates observed after 1993 due to the higher level of the pension base E and to the "1 percent

indexation" rule (part B); however, the pre-1993 SSW is higher because all future benefits were indexed through a compounded wage growth rate.

The ACC panel shows the accrual of pension benefits for this group of individuals. The accrual was negative for all individuals before 1993 but got close to zero after that date for individuals aged 55 to 58. The accrual rose but remained heavily negative for 59-year-olds. It is worth stressing that for this latter age group, we are comparing the choice of retiring with 40 versus 41 years of contributions. Given that the benefit was roughly the same, there was no gain from working one more year (unless that was an exceptionally high earnings year—that is not the case with the common average earnings profile).

The IT panel shows the corresponding implicit tax rates: these are always positive and high for all ages before 1993 and become (almost) zero after 1993 for all ages but the oldest age considered here (age 59). Since the implicit tax represents a summary relative measure of the incentive to work an extra year, our results suggest that for a representative "average" worker, it was optimal to retire as soon as possible before the 1993 reform. The 1993 reform made the pension system more "age neutral," at least for ages 55 to 58 (but notice that a man could no longer retire at age 55 with 36 years of contributions past year 2000). A man who was 59 years old between 1985 and 1993 had a huge tax on working an extra year, as discussed above. The 1993 reform reduced the implicit tax to roughly 40 percent, but the incentive to retire, having collected 40 years of contributions, remained extremely strong.

Figure 6.7b presents the same calculations based on net values. In particular, earnings are net of income taxes and employee's contributions; benefits are net of income taxes.[6] The only difference with respect to figure 6.7a is that replacement rates are higher, ranging from 83 percent to 93 percent. For a man with 40 years of contributions, the first net pension benefit was a larger fraction of the last net salary because earnings pay contributions, while pensions do not. The remaining figures show an identical pattern to the gross earnings case; only the levels differ because of the different values of benefits and earnings.

In figure 6.8 we show similar graphs for men aged 60 to 66. We extend the calculation to 66-year-old men because their benefits exhibit an important variation due to the reforms, which in this time frame is not applicable for workers older than 66. For the 60–66 age band, a distinction must be made between early retirement and old age benefits because, depending on the eligibility conditions, some workers could claim one or the other form of pension.

6. We do not account for employers' contributions throughout this chapter, as they do not enter gross earnings used for the benefit computation. The tax rates and contribution rates (drawn from OECD) we use throughout are consistent with the definition of net earnings and net benefits adopted.

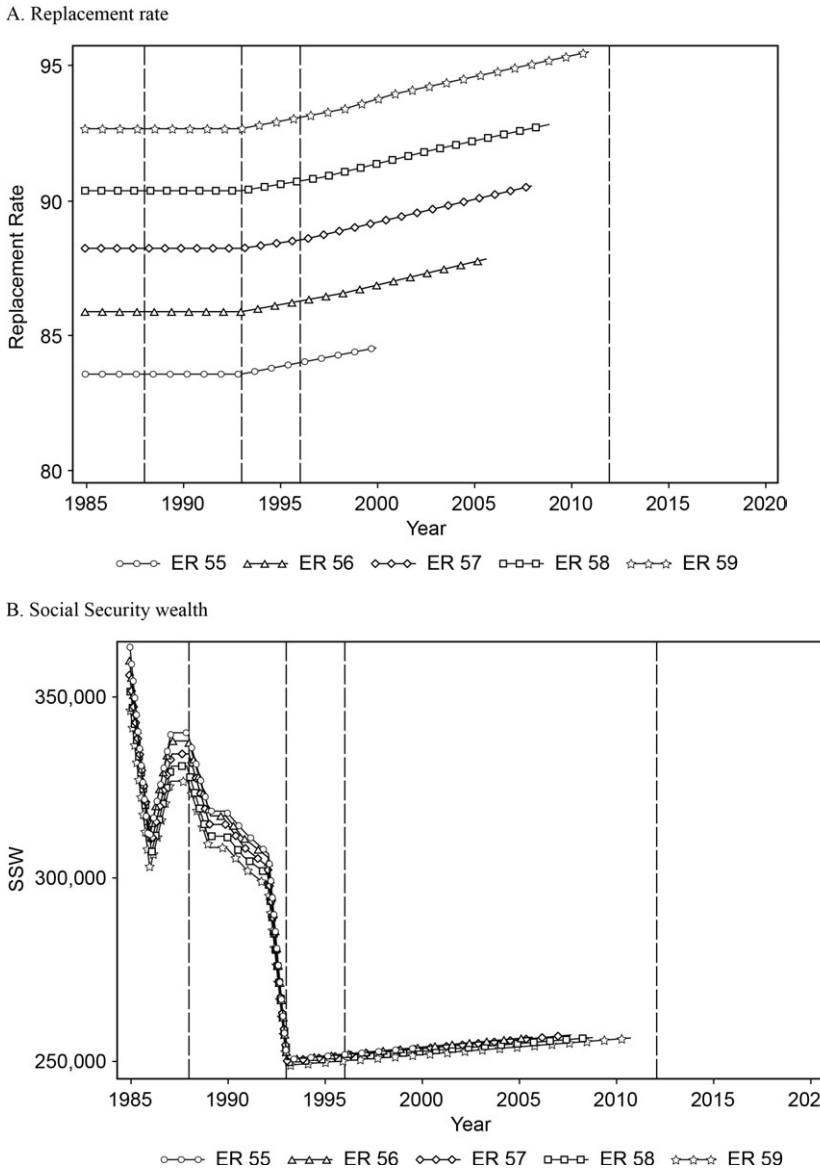
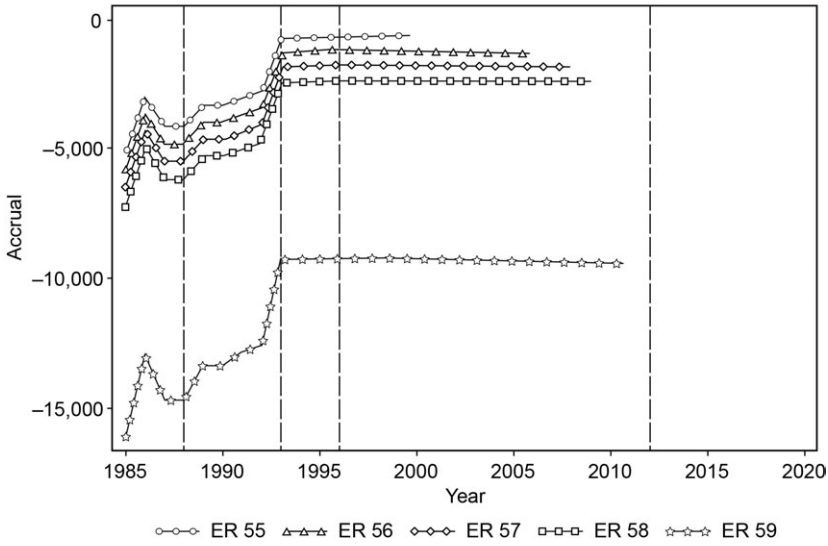


Fig. 6.7b Financial incentives for men aged 55–59, medium income, common earnings profile (net values)

Note: Vertical lines mark (major) pension reform years.

C. Accrual



D. Implicit tax rate

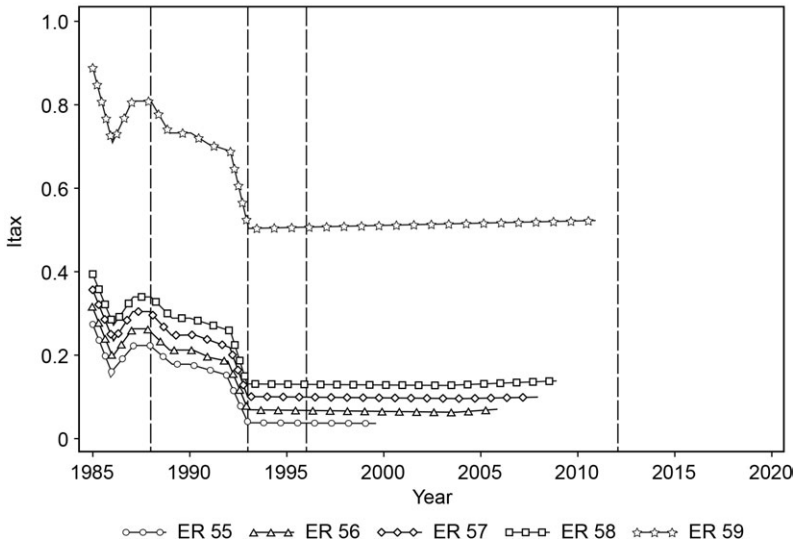


Fig. 6.7b (cont.)

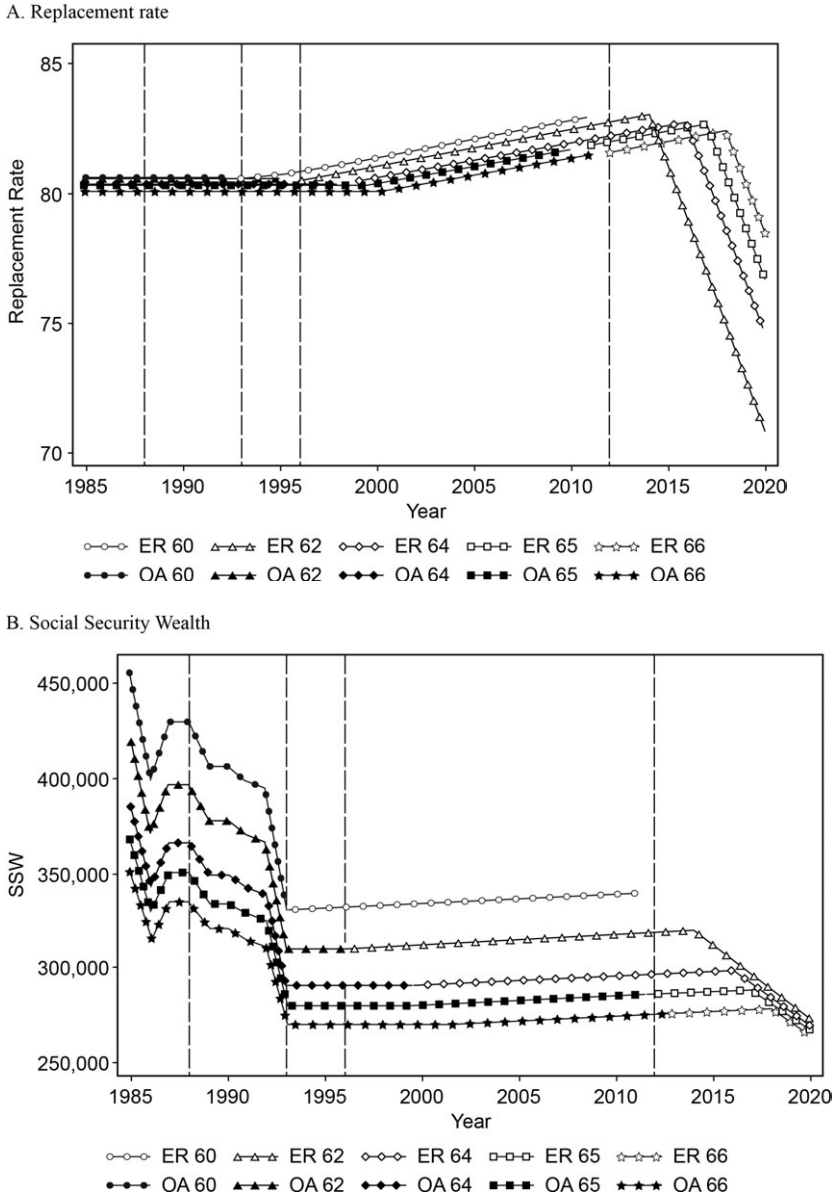
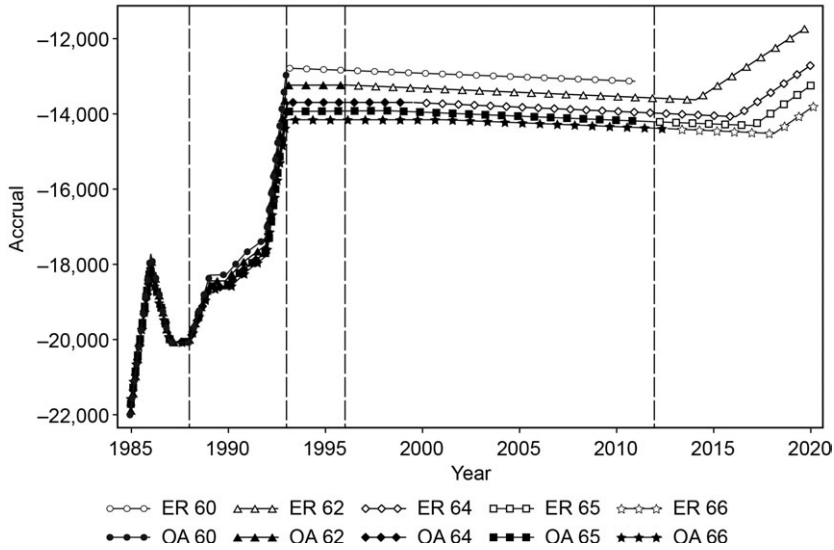


Fig. 6.8 Financial incentives for men aged 60–66, medium income, common earnings profile (gross values)

Note: Vertical lines mark (major) pension reform years.

C. Accrual



D. Implicit tax rate

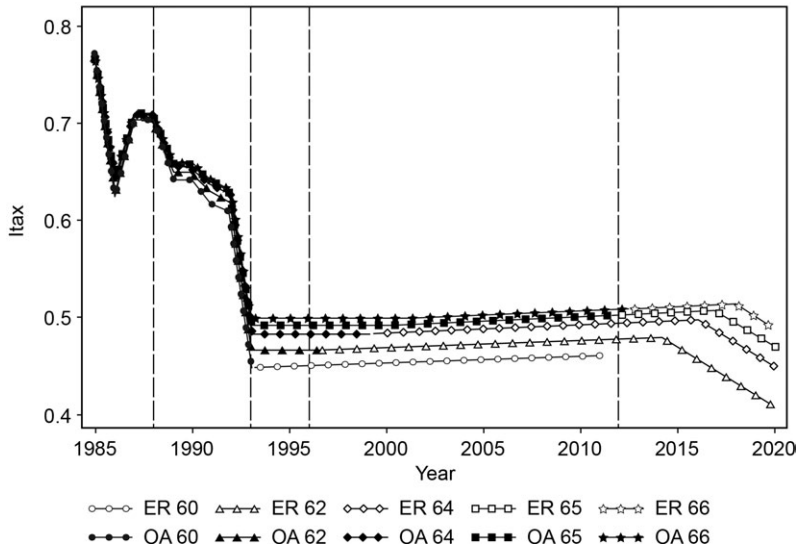


Fig. 6.8 (cont.)

Panel A of figure 6.8 shows, once again, the replacement rate for gross earnings and gross pension benefits over the years for middle-income men. Replacement rates were essentially flat in the first part, around 80 percent, and gradually increased to 83 percent in more recent years. The flat RR lines are explained by the simple defined benefit rule based on the last five years of contributions of the pre-1993 period (part A), affecting workers who had completed 40 years of contributions before 1993.[7] The increasing pattern is once again due to the "part B" component applied after the 1993 reform (in particular to the 1 percent annual revaluation rate): the line becomes steeper for 60-year-olds starting in 1994 but only in 1996 for 62-year-olds and so on. Younger individuals have higher replacement rates because of the compounding effect. Interestingly enough, this panel also shows the first effects of the 2011 reform. For a 62-year-old retiree, the effect becomes visible as of 2015, when his replacement rate takes a sharp downward turn. In fact, the 2011 reform introduced a "part C" defined contribution component on a pro-rata basis—given our assumptions about the starting working age—and such an individual would have fewer than 40 years of contributions in 2011, which makes him eligible for the part C share. A similar drop affects a 64-year-old individual in 2017 and so on.

The SSW panel reports social security. The first point to stress is that individuals of a given age (60, say) could enjoy old-age retirement in the early years (1993 for age 60) but only had access to early retirement in later years (1994 onward for age 60) because eligibility rules became more stringent. In fact, from 2011, a 60-year-old man could no longer exit the labor force and draw a pension benefit. The pattern of the SSW profiles is affected by the indexation rules, as explained in figure 6.7 above. On top of this, a 60-year-old would enjoy a higher SSW than a 62-year-old because the benefit was largely the same, but it was collected for two more years on average. Past 2015, one can observe drops in SSW for the men aged 62 and 64 and so on as a result of the 2011 reform.

The ACC panel shows the accrual of pension benefits for this group of individuals. The accrual was negative and large in absolute terms for all individuals, both before and after 1993, but grew (got closer to zero) after 1993. The fall of SSW for men aged 62 in 2015 is reflected in a rise of the accrual around that year—and similarly for 64-year-olds in 2017 and so on. These individuals increase their pension even when they exceed the 40 years of contributions threshold thanks to the 2011 reform because the contributory share of their pension (part C) is on top of the accrued defined benefit share of the pension.

Panel D of figure 6.8 shows the corresponding implicit tax rates: these are always positive and high for all ages before and after 1993, when they

7. The corresponding graphs for the "net values" are presented in the appendix. As in the previous case, the patterns of all the indicators are identical, while the levels differ.

all fall to 40 percent and hover around that number for the remaining years. The implicit tax is then stable but falls past 2015 in sequential order as the 2011 reform kicks in.

Overall, for the 60–66 age group, the pre-1993 social security system imposed an extremely high penalty on work. After 1993, the penalty is still high, inducing people to retire as soon as possible, but closer to what is also observed in other countries. Finally, the 2011 reform gradually reduces the implicit tax on work due both to the eligibility conditions and to the extra value accrued toward the pension benefit when working additional years.

It is useful to also show the role of financial incentives in terms of the same individuals over the life cycle. We present these results only for men, but we include two groups: medium earnings and high earnings. Figure 6.9 shows the implicit tax rates by age for different cohorts of medium- and high-income men, respectively. The implicit tax rate was highest for the oldest cohort and lowest for the youngest. But it remains above 40 percent for everybody in the medium-income group, past age 60. This is in line with what is observed in figure 6.7 above. The picture for high-income individuals is quite different: only the oldest cohort faced high implicit tax rates throughout, while for the other cohorts, the implicit tax was below 20 percent up to age 63 and passed the 40 percent mark as of age 64. This pattern reflects the assumption made that high-income individuals start working and therefore contributing later in life. The youngest cohort is effectively prevented from retiring until age 66.

In figure 6.10 we present a comparison of the level of SSW across levels of income (earnings) for men aged 62. This figure clearly portrays the relevance of the seniority rule. For a low-income retiree, SSW is the lowest in any year simply due to the lower earnings level, which directly enters the "pension base." However, low-income workers are assumed to experience an early entry into the labor market so that they can draw a pension at age 62 (an early retirement pension) even after 2011. On the other hand, the 2011 reform curtails their benefits by introducing a "part C" in the benefit formula on a pro-rata basis given that these workers had not completed 40 years of contributions in the relevant year (say, 2017). In a similar fashion, a medium-income worker could still retire through early retirement after 2011, but the impact of the 2011 reform would be more significant, as lower seniority is associated with a higher share of the part C component in the benefits. At the other extreme, a man of the same age characterized by a high-income profile has a higher SSW throughout, but he could no longer retire from 2011 because of the more stringent eligibility conditions.

6.3.2 Middle-Income Women: Common Earnings Age Profile

In this subsection we report and discuss financial incentive measures for middle-income women aged 55–59 and aged 60–66 based on common age-earnings profile, as we just did for men. The common profile (see figure 6.5)

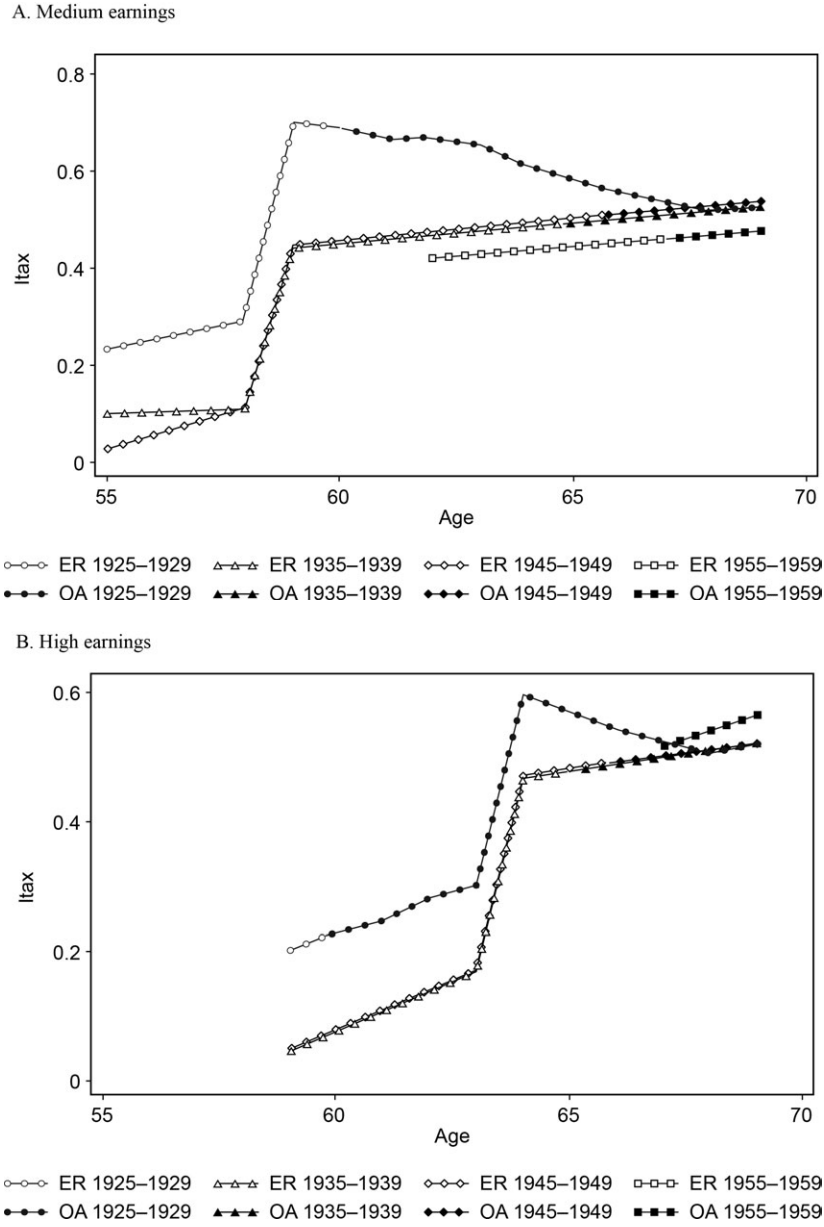


Fig. 6.9 Implicit tax rates by age and cohort, gross earnings, common earnings profile, men

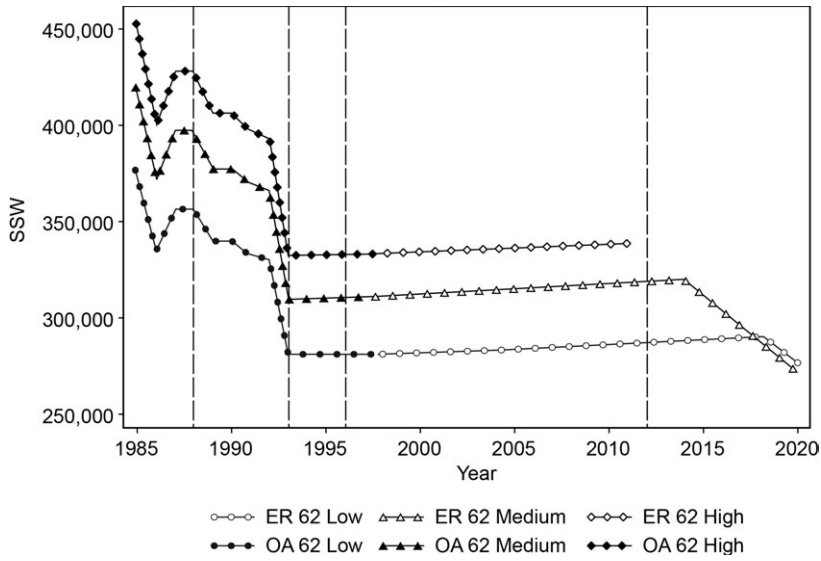


Fig. 6.10 Comparison of SSW for different income levels: Gross earnings, common earnings profile, men age 62

has the same starting age as for men but is characterized by a peak around age 25, followed by a gentle decline up to the mid-30s, and then a steady increase all the way until age 60. The presence of a hollow around childbearing and child-rearing ages is the way in which the profile accounts for the more limited labor market participation in midcareer for women.

Despite lower lifetime earnings and a different profile for women compared to men, the results do not look qualitatively different for the 55–59 age group because the early retirement ages were the same across genders over the years, and the common earnings profiles do not take into account the interrupted nature of female working careers that is an important issue in Italy. If one took into account that women typically have fewer years of contributions, one would be able to see the consequences of the gender-specific statutory retirement pension ages and their changes over time, which we discussed in section 6.1.

In figure 6.11 we show the financial incentive indicators for middle-income women aged 55–59. As was the case for men, the gradual increase in early retirement pension eligibility age over the years is apparent in all graphs: all "55 years old" lines disappear after 2002, the "56 years old" lines disappear in 2008, and so forth. In fact, as of 2011, no woman aged less than 60 characterized by the common medium-income profile could retire and claim a pension in Italy.

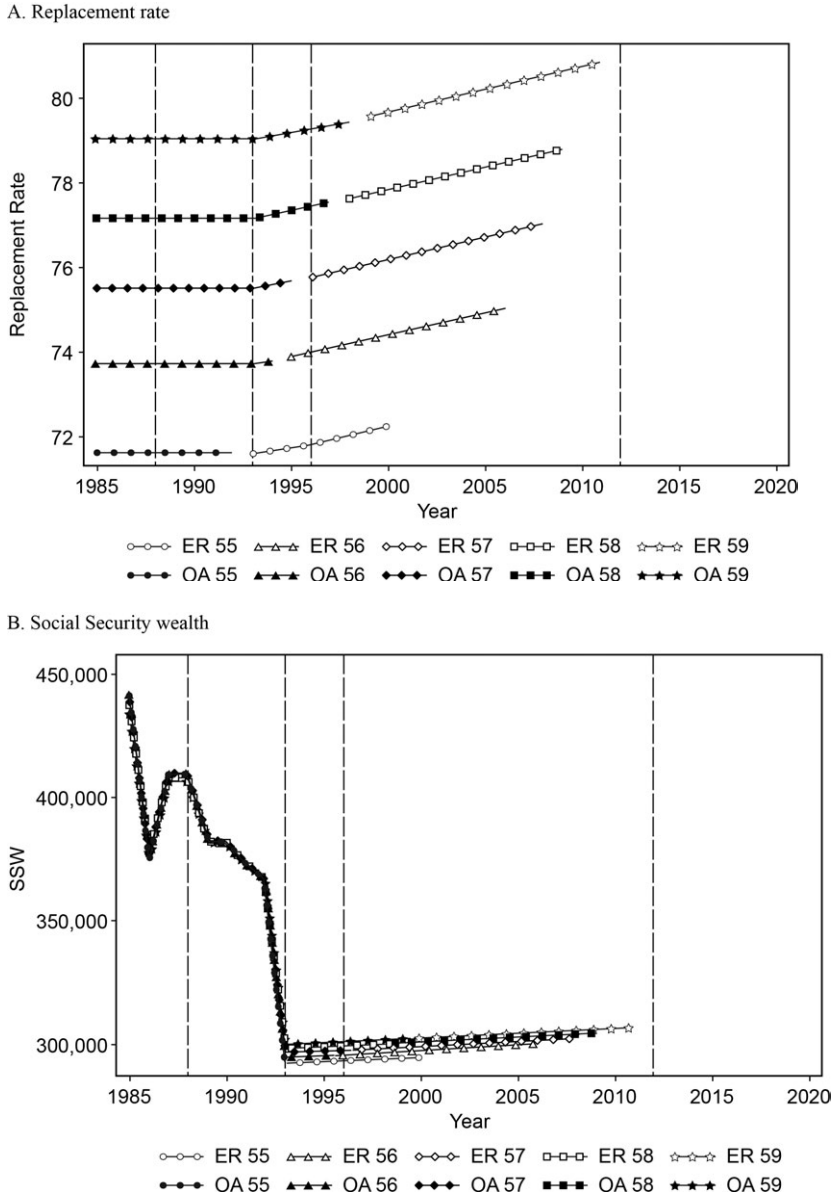
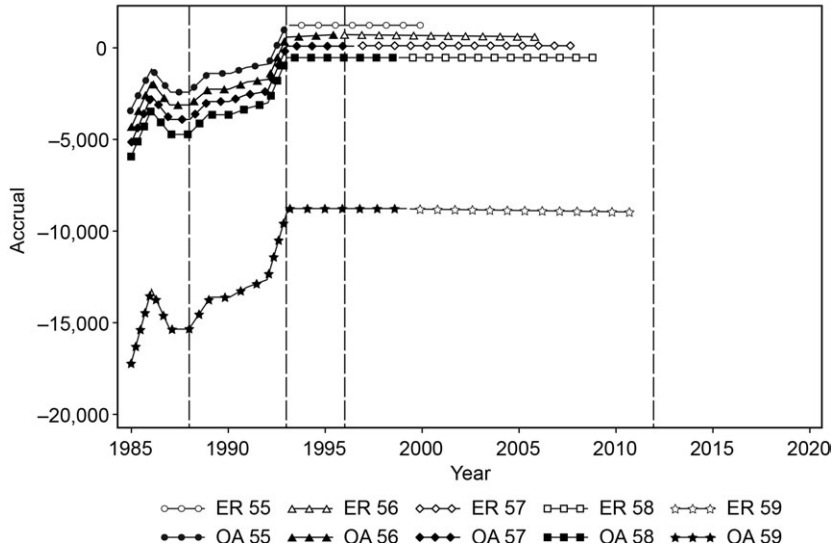


Fig. 6.11 Financial Incentives for women aged 55–59, medium income, common earnings profile (gross values)

Note: Vertical lines mark (major) pension reform years.

C. Accrual



D. Implicit tax rate

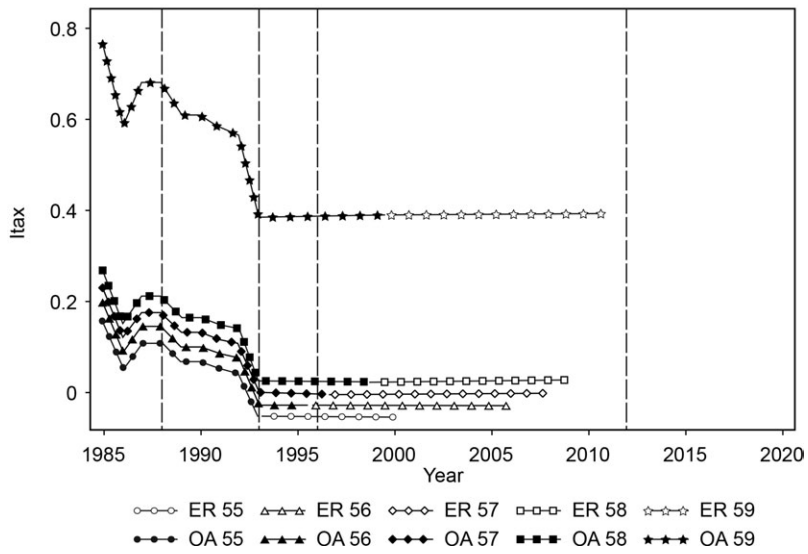


Fig. 6.11 (cont.)

Panel A of figure 6.11 shows how replacement rates changed over the years for middle-income women aged 55 to 59. Replacement rates were stable before the 1993 reform, ranging between 71 percent for women aged 55 and 79 percent for women aged 59, and then gently rose. These replacement rates are somewhat lower than the replacement rates for men, but the overall patterns are effectively the same. Panel B of figure 6.11 shows social security wealth for women: the patterns by age and over the years are similar to what we have already seen and discussed for men of the same age. However, we should stress that the actual values are 10 percent to 20 percent lower for women compared to otherwise identical men.

The ACC panel shows the accrual of pension benefits: it was negative for all women before 1993 but became positive after that date for individuals aged 55 to 58 (it remained heavily negative for 59-year-olds for reasons we already discussed: we are comparing the choice of retiring with 40 or 41 years of contributions). The IT panel shows the corresponding implicit tax rates: these are always positive for all ages before 1993 and become negative after 1993 for all ages but the oldest type, 59 years of age. Our results suggest that for a representative "average" female worker, it was optimal to retire as soon as possible before the 1993 reform. For women, the 1993 reform produced mild incentives to retire later, at least for ages 55 to 58 (but notice that a woman could no longer retire at age 55 with 36 years of contributions past year 2000). A woman who was 59 years old between 1985 and 1993 had a huge tax on working an extra year, as discussed above. The 1993 reform reduced the implicit tax to roughly 40 percent, but the incentive to retire with 40 years of contributions remained extremely strong.

In figure 6.12 we show similar graphs for women aged 60 to 66. Although the results are qualitatively similar to that observed for men, gender differences are more pronounced for these age groups.[8] Panel A of figure 6.11 shows replacement rates, which were essentially flat in the first part and gradually increased in more recent years, ranging between 80 percent and 83 percent. The flat lines are explained by the simply defined benefit called "part A," while the increasing part is once again due to the "part B" component applied after the 1993 reform. Younger women have lower replacement rates because the age profile is increasing until age 60 (in marked difference to what we saw for men), and therefore the later one retired, the higher the average of past earnings would be (whether it was 5 years until 1993 or 10 years after 1993). There are drops in the replacement rate for 60-year-old retirees as of 2011 and for 62-year-old retirees as of 2015 because of the 2011 reform for reasons we already discussed.

As for SSW, the first point to stress is that women aged 60 or more could continue drawing an old-age pension until at least the 2011 reform. As of 2011, a 60-year-old woman could no longer draw an old-age pension ben-

8. The corresponding graph for net values is presented in the appendix.

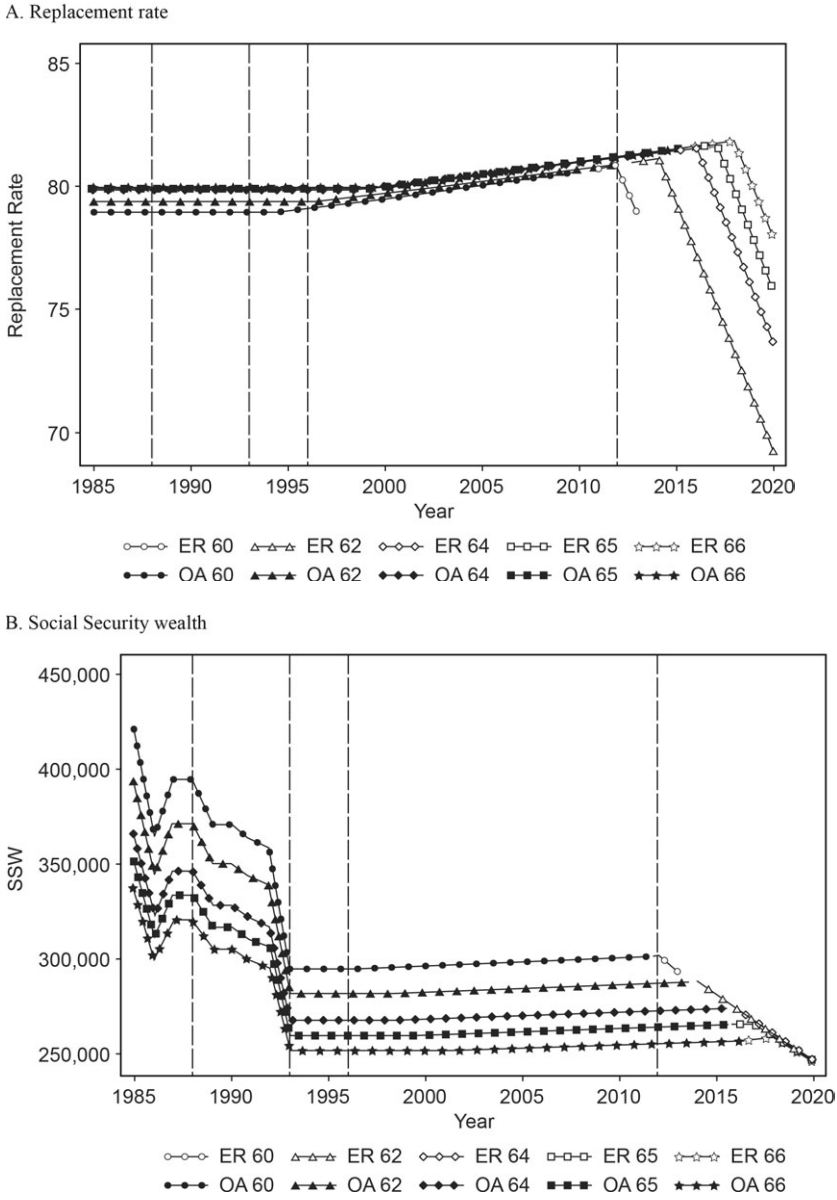
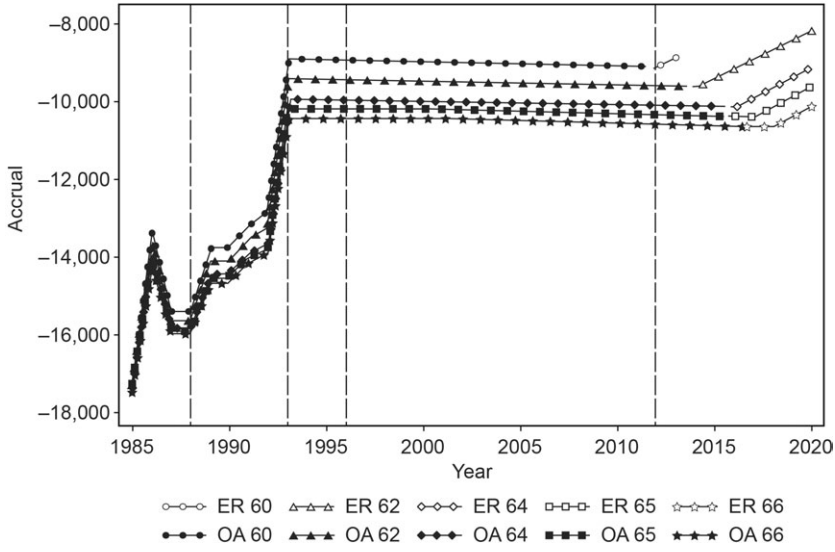


Fig. 6.12 Financial incentives for women aged 60–66, medium income, common earnings profile (gross values)

C. Accrual



D. Implicit tax rate

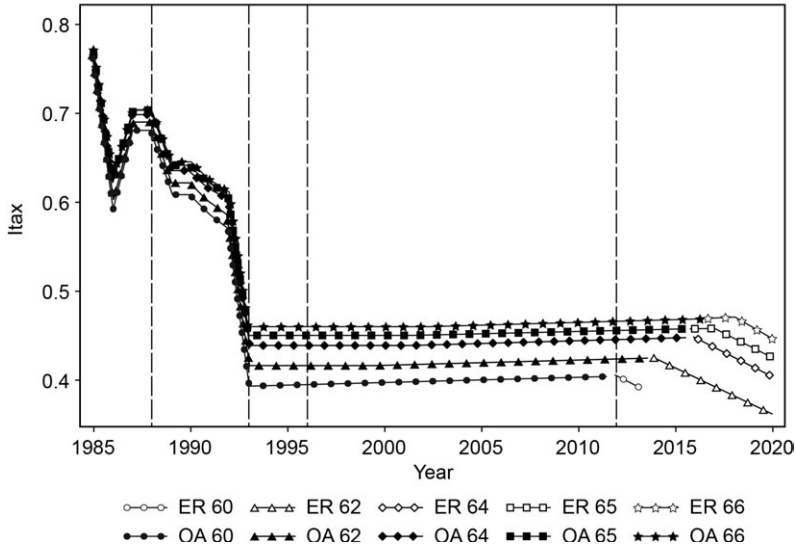


Fig. 6.12 (cont.)

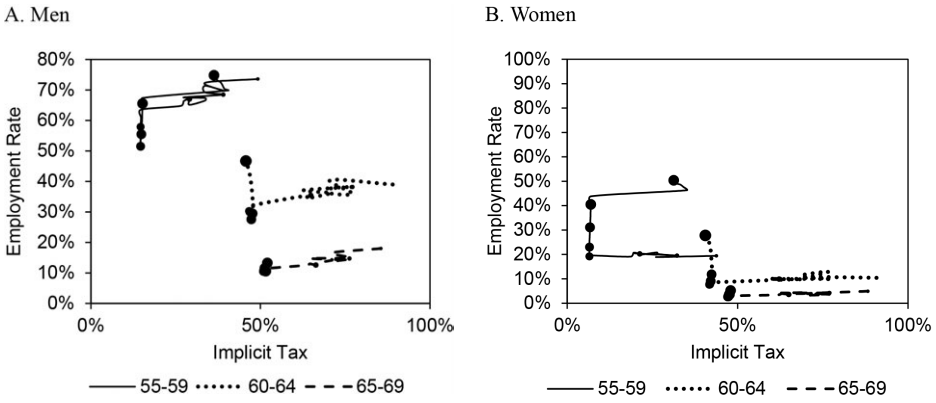


Fig. 6.13 Employment rate version, implicit tax

efit, but (unlike a man) she could still receive an early retirement pension if she had enough years of contributions. Only after the year 2013, she could no longer retire and draw a pension. As we have seen above, the pattern of the SSW profiles is affected by the indexation rules: prior to 1993, the earlier an individual retired, the longer the period in which pension benefits enjoyed full wage indexation, and the higher the SSW. On top of this, a 60-year-old woman would enjoy a higher SSW than a 62-year-old because the benefit was largely the same, but it was for two more years on average. This is enough to compensate for the lower replacement rate. Past 2015, one can observe drops in SSW for women aged 60, 62, and 64 as a result of the 2011 reform as explained above. The accrual of pension benefits for this group of individuals was negative for all individuals both before and after 1993 but grew after 1993 for all. The decreased SSW for women aged 60 in 2013 and 62 in 2015 is reflected in a rise of accrual around that year—and similarly for 64-year-olds in 2017. These individuals increase their pension even when they exceed the 40 years of contributions threshold thanks to the 2011 reform (part C). The IT rates are in line with these results.

Figure 6.13 describes the relationship between the implicit tax (ITAX) and the employment rate by age group, separately for men and women. We note that there is not a well-defined pattern for this relationship, and these graphs are not, on the whole, very supportive of the hypothesis that variations in ITAX are driving changes in employment at older ages. This may be due to several reasons. On the one hand, it may be that the changes introduced by the various reforms are not fully internalized by the variations in the ITAX. Indeed, we do not expect that the effects of the increase in the statutory eligibility ages are fully captured by the implicit tax. On the other hand, there is important heterogeneity among working careers and earning histories of the individuals, and the various policies affect them in a different way. Such

heterogeneity is not perfectly captured by our calculations, which use some strong assumptions regarding the beginning of the working life and the continuity of the working career. We will address this drawback in the next phase of the project by using datasets that will allow us to exploit complete detailed information on real individuals' work profiles.

6.3.3 Implicit Tax: Comparisons

In this section, we focus on the key incentive variable, the implicit tax of postponing retirement by one year, and show how this differs when we change the earnings definition. In one case, we take the Italian earnings profile, which differs from the common earnings profile in ways that we shall discuss later; in another case, we consider a construct based on gross income and compare it to the corresponding net income measure.

We should stress that the Italian age-earnings profiles have been obtained with a methodology similar to the one adopted for the common earnings profiles. Even though they reflect some peculiarities of the Italian labor markets—particularly important for women—they are expressed in real terms. This implies that specific rules meant to partially compensate for inflation (such as the 1 percent revaluation of past earnings in the computation of the 10-year average that was introduced by the 1993 reform) appear generally beneficial to pension claimants even when in actual fact they were not.

As we can see from figure 6.14, the implicit tax rates are qualitatively similar across the two earnings profiles. They are slightly lower but otherwise similar when earnings and benefits are defined gross of tax and contributions rather than net. A very similar picture emerges for men in the 60–64 age group and is not reported here for brevity. In the sequel, we shall focus on net incomes for women and report only those cases where we observe nonnegligible differences between the common and the Italian age-earnings profiles.

As for women, the only relevant differences between the results deriving from the common earnings profile and the Italian earnings profile are due to the shape of the profile itself. As an example, we present the case of women 60–66 years old in figure 6.15.

Figure 6.15 shows the implicit tax rate for the 60- to 66-year-old women. Panel A has already been shown in the previous section and is computed using the common earnings profile; panel B corresponds instead to the Italian earnings profile. We see that the level of the implicit tax is some 20 percent lower when we use the Italian profile after 1993, even though in this case all implicit tax rates are positive throughout. This is because in the common profiles for women, there is a drop around ages 35–40 followed by a mild increase, while in the Italian profile, normalized wages are somewhat constant up to approximately age 58 and grow thereafter. Vertical distances across ages 60, 62, and 64 are much larger in the right-hand panel—they are very small instead across ages 64, 65, and 66 in both panels.

Finally, table 6.1 presents a summary of the implicit tax rates over time

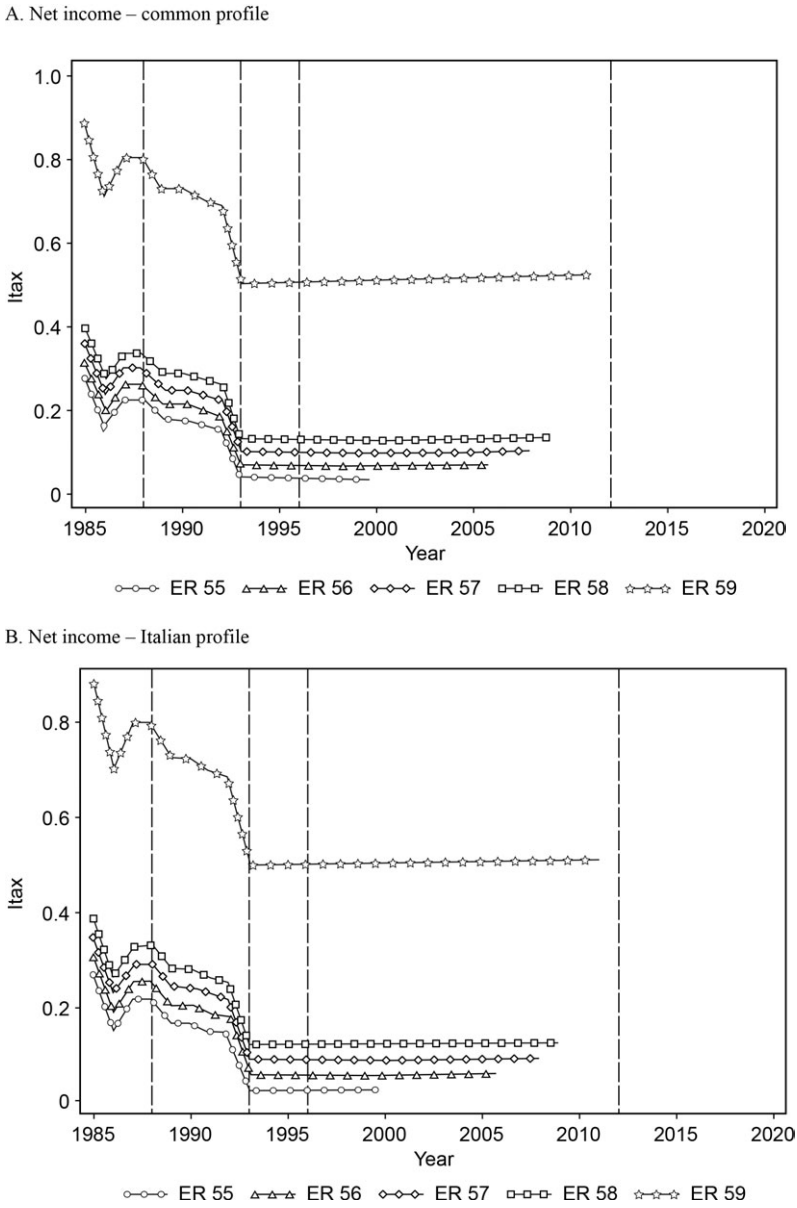
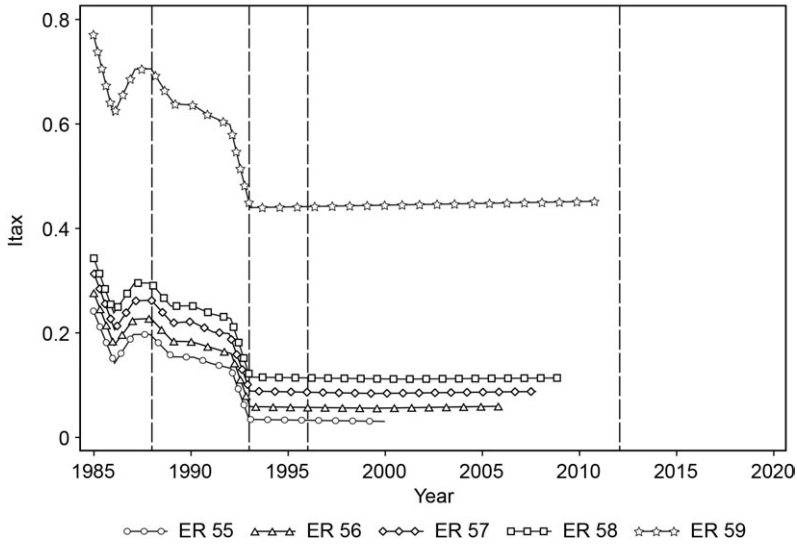


Fig. 6.14 Comparison of implicit tax rates for men aged 55–59

C. Gross income – common profile



D. Gross income – Italian profile

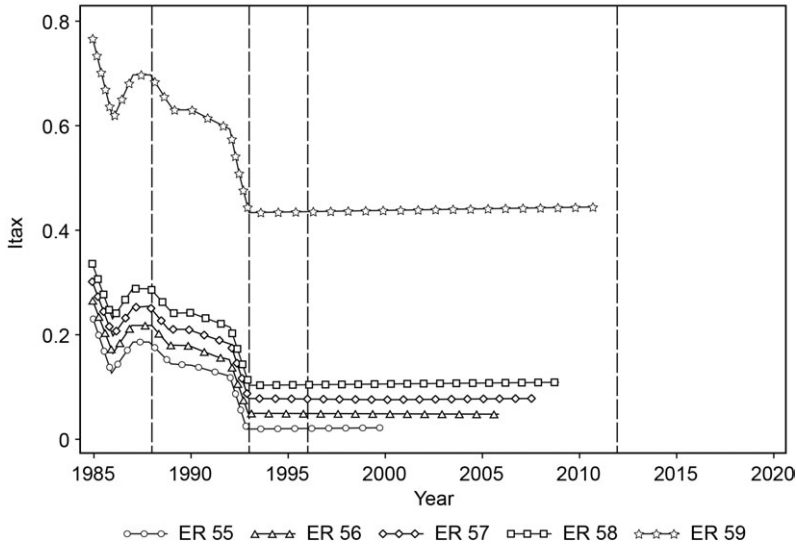


Fig. 6.14 (cont.)

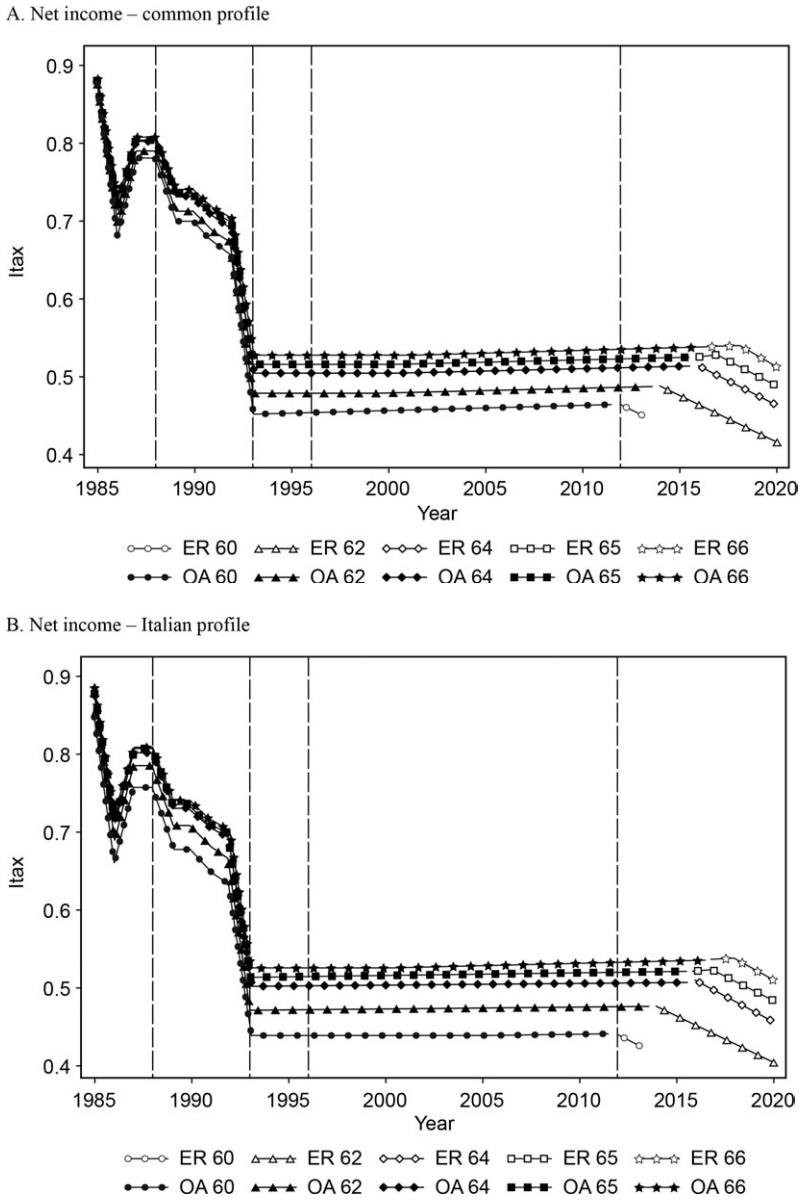


Fig. 6.15 Comparison of implicit tax rates for women aged 60–66 (net incomes)

Table 6.1 **Implicit tax rates for different years and ages (common earnings profile)**

Gender	Year	itax55	itax56	itax57	itax58	itax59	itax60	itax61	itax62	itax63	itax64	itax65	itax66	itax67	itax68	itax69
Men	1980	0.33	0.37	0.41	0.44	0.91	0.90	0.90	0.89	0.88	0.88	0.87	0.86	0.85	0.85	0.84
	1985	0.24	0.28	0.31	0.35	0.78	0.77	0.77	0.77	0.77	0.77	0.77	0.76	0.76	0.76	0.76
	1990	0.16	0.19	0.22	0.25	0.64	0.64	0.65	0.65	0.65	0.66	0.66	0.66	0.66	0.67	0.67
	1995	0.03	0.06	0.09	0.11	0.44	0.45	0.46	0.47	0.47	0.48	0.49	0.50	0.51	0.52	0.53
	2000	0.03	0.06	0.08	0.11	0.45	0.45	0.46	0.47	0.48	0.48	0.49	0.50	0.51	0.52	0.53
	2005		0.06	0.09	0.11	0.45	0.46	0.47	0.47	0.48	0.49	0.50	0.50	0.51	0.52	0.53
	2010					0.45	0.46	0.47	0.48	0.48	0.49	0.50	0.51	0.52	0.52	0.53
	2016								0.46	0.48	0.50	0.51	0.51	0.52	0.53	0.54
	2020								0.41	0.43	0.45	0.47	0.49	0.51	0.53	0.54
Women	1980	0.26	0.30	0.34	0.37	0.92	0.92	0.91	0.91	0.90	0.90	0.89	0.89	0.88	0.88	0.87
	1985	0.16	0.19	0.23	0.26	0.76	0.76	0.76	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
	1990	0.07	0.10	0.13	0.16	0.60	0.61	0.61	0.62	0.63	0.64	0.64	0.65	0.65	0.65	0.66
	1995	−0.05	−0.03	0.00	0.02	0.39	0.40	0.41	0.42	0.43	0.44	0.45	0.46	0.47	0.48	0.49
	2000	−0.05	−0.03	0.00	0.02	0.39	0.40	0.41	0.42	0.43	0.44	0.45	0.46	0.47	0.48	0.49
	2005		−0.03	0.00	0.02	0.39	0.40	0.41	0.42	0.43	0.44	0.45	0.46	0.47	0.48	0.49
	2010					0.39	0.40	0.41	0.42	0.43	0.44	0.46	0.47	0.48	0.49	0.50
	2016							0.38	0.40	0.43	0.45	0.46	0.47	0.48	0.49	0.50
	2020							0.34	0.36	0.38	0.40	0.43	0.45	0.47	0.49	0.50

and by age: the implicit tax is increasing with the age of retirement and decreasing over time.

6.4 Conclusions

This chapter has discussed the Italian evidence on labor force participation reversal at older ages over the recent decades in relation to pension reforms passed since the early 1990s. It has shown how eligibility for early retirement and old-age pension schemes has been restricted over the years, making it progressively more difficult for individuals in their 50s or early 60s to start drawing a pension. In this chapter we have computed retirement financial incentive measures in the public pension system and shown how these vary by age, year, and (lifelong) income. We have reported how the incentives system depends on the specific features of the earnings profiles of Italian workers by comparing them with those that would obtain if the earnings profiles were as in the common case considered in this volume.

The key message of this chapter is that pension reforms in Italy were most effective in raising the effective retirement age by restricting access to financially advantageous public pension schemes. The implicit tax rate of postponing retirement was in fact reduced for individuals in their 50s as a result of the 1993 and 1995 reforms but remained positive for most (with the notable exception of some middle-income women). The dramatic decrease in the flow of new pensioners below age 60 is mostly attributable to the operation of a combination of age and years of pension contributions restrictions that were phased in over the period.

An important cutoff in the public pension system can still be found at 40 years of pension contributions for the individuals who could retire and draw a pension during the 1990s and 2000s: under the old defined benefit rules, the replacement rate would effectively increase by 2 percent for each additional year of contributions up to a ceiling of 40, after which it would not rise any further. For middle-income individuals age 60 or more, who according to our earnings profile would have contributed 40 years or more to their public pension, the implicit tax remained high (roughly 40 percent), as postponing retirement by an additional year would simply imply foregoing one year of pension benefits.

The much more radical pension reform of 2011 further restricted the possibility to claim a pension at relatively young ages (less than 62), even for those individuals with 40 or more years of contributions, and introduced a pro-rata defined contribution component to the pension. This last change started having an effect on the implicit tax rate, but the financial incentive to draw a pension as soon as possible remains strong because pension benefits are still prevailingly computed according to the defined benefit formula.

Appendix

6.A1 Data Sources

The data on labor force participation (LFP) are drawn from two sources: (i) the MARSS database (the data on the LFP for the 55–59 age group [up to 1983] and for the 65–69 age group [up to 1993]) and (ii) the OECD database (the LFP series for the 60–64 band and for the remaining years of the 55–59 and 65–69 age bands). The MARSS dataset is provided by ISTAT (the Italian National Statistics Office) and is based on the Labour Force Survey. For the description of the pathways to retirement, we used data on the stock of beneficiaries from the Italian National Institute of Social Security (INPS). The data until 2004 are obtained from a representative sample of recipients while for the following years the information on the entire stock of beneficiaries was made available. In order to estimate the income profiles, we use data from the Survey on Italian Households Income and Wealth (SHIW, several years) conducted by the Bank of Italy. The survey takes place every two years and collects information both on households' wealth and assets and also on relevant individual characteristics and income of all family members. In order to estimate the income profiles, we use data from 1987 until 2014. We retain the employees in dependent employment (dropping the self-employed) so that the final sample contains 83,478 records (49,752 for men and 33,726 for women) for a total of 42,429 individuals. The income tax rates come from the OECD database (OECD.Stat).

6.A2 Additional Results

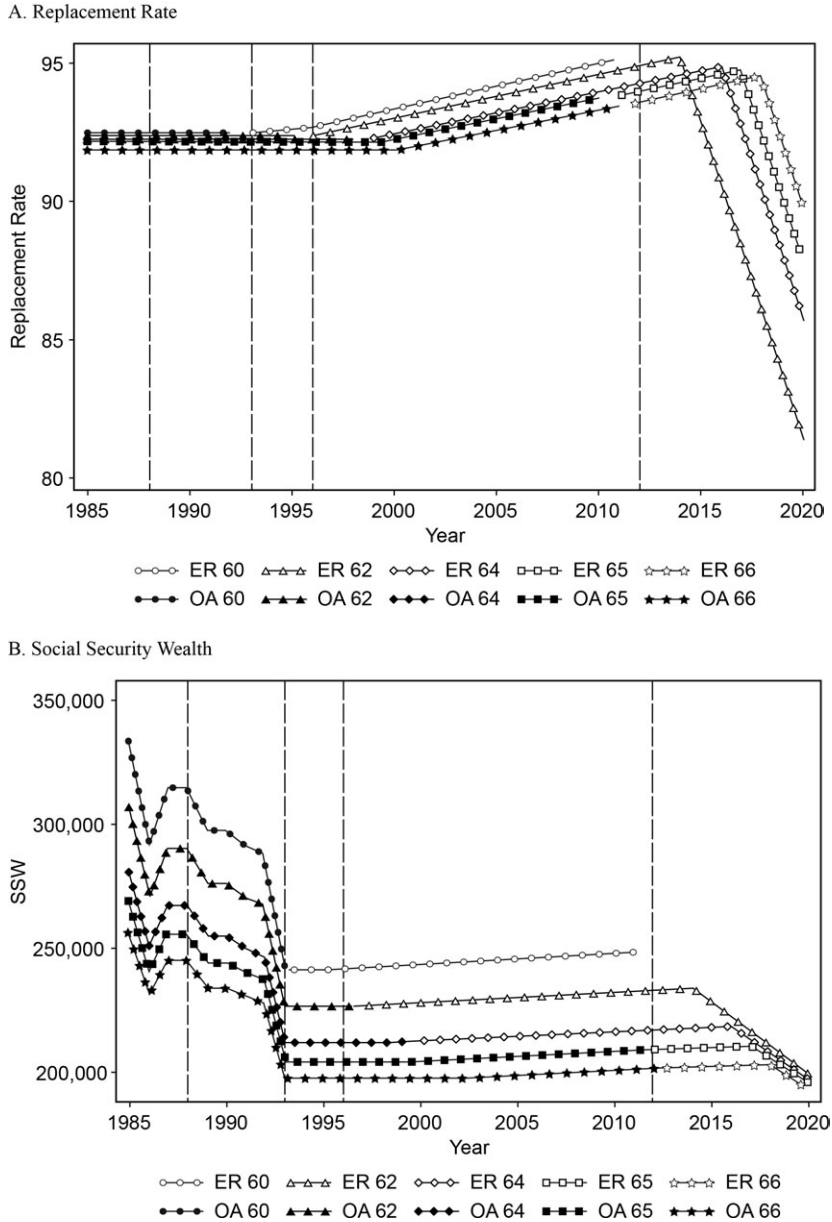
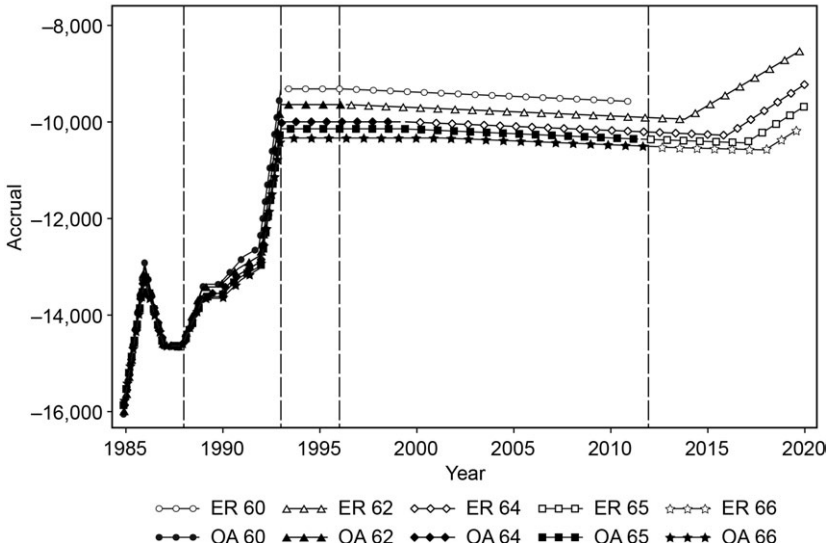


Fig. 6.A.1 Financial incentives for men aged 60–66, medium income, common earnings profile (net values)

Note: Vertical lines mark (major) pension reform years.

C. Accrual



D. Implicit Tax Rate

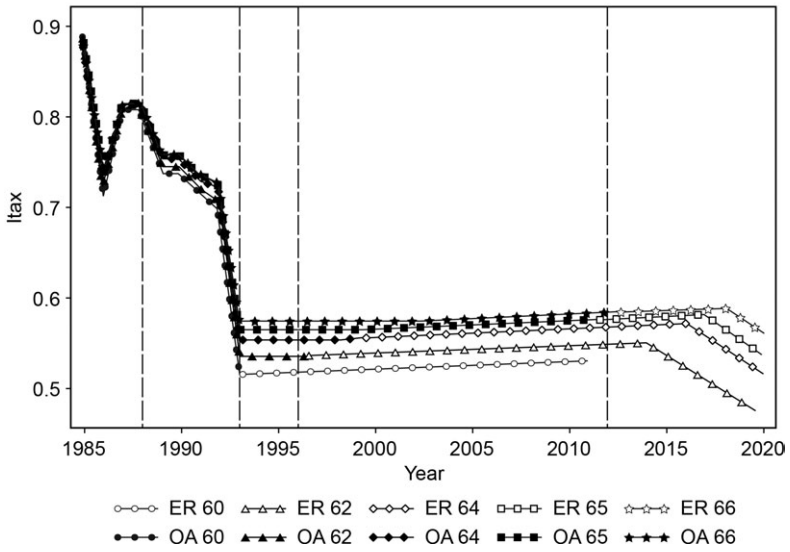


Fig. 6.A.1 (cont.)

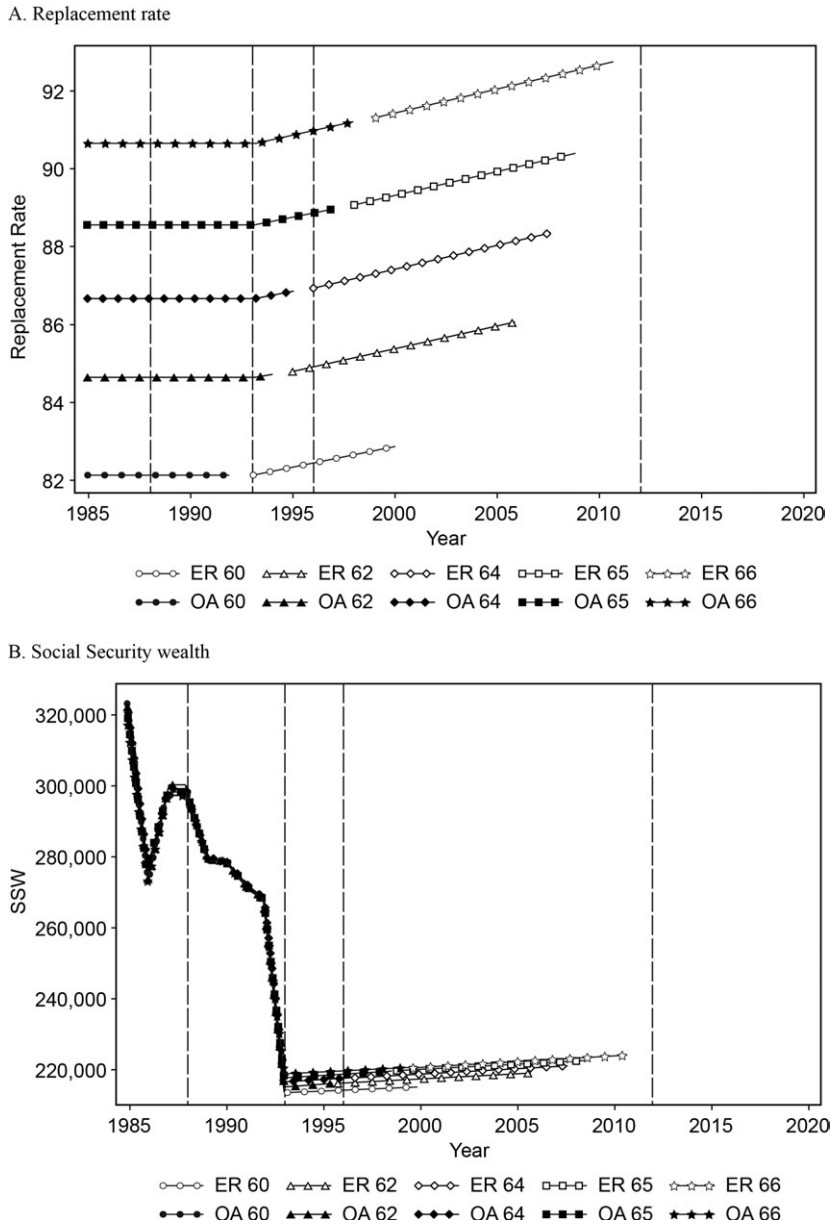
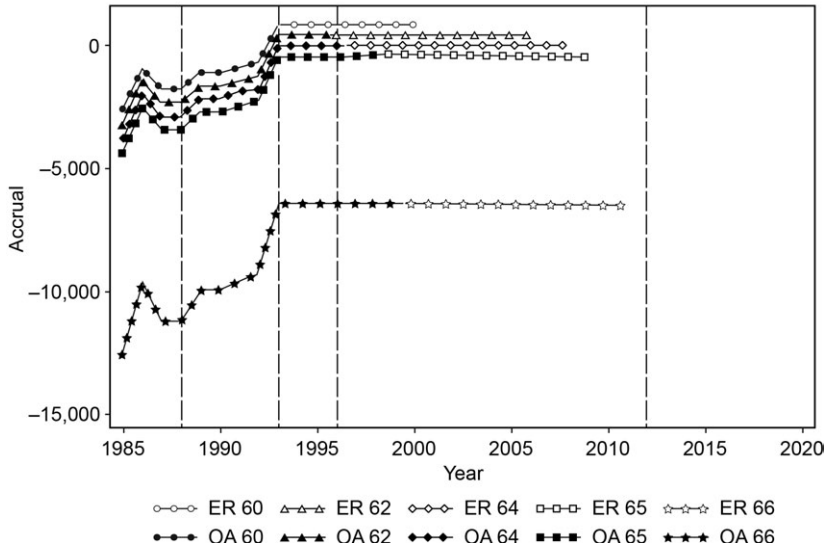


Fig. 6.A.2 Financial incentives for women aged 55–59, medium income, common earnings profile (net values)

Note: Vertical lines mark (major) pension reform years.

C. Accrual



D. Implicit Tax Rate

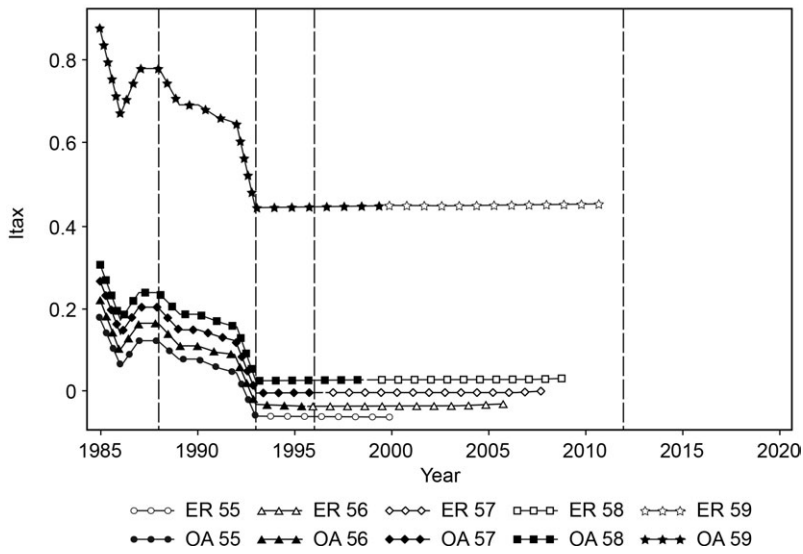


Fig. 6.A.2 (cont.)

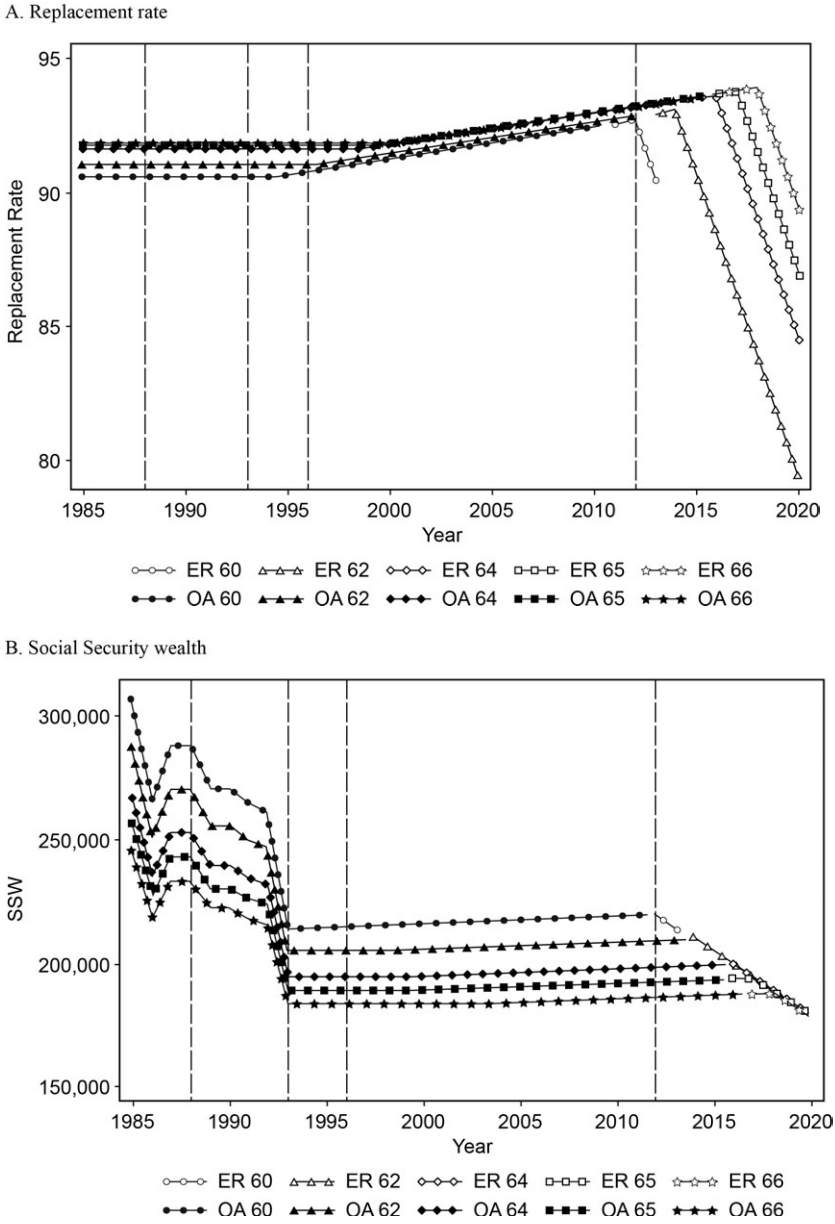
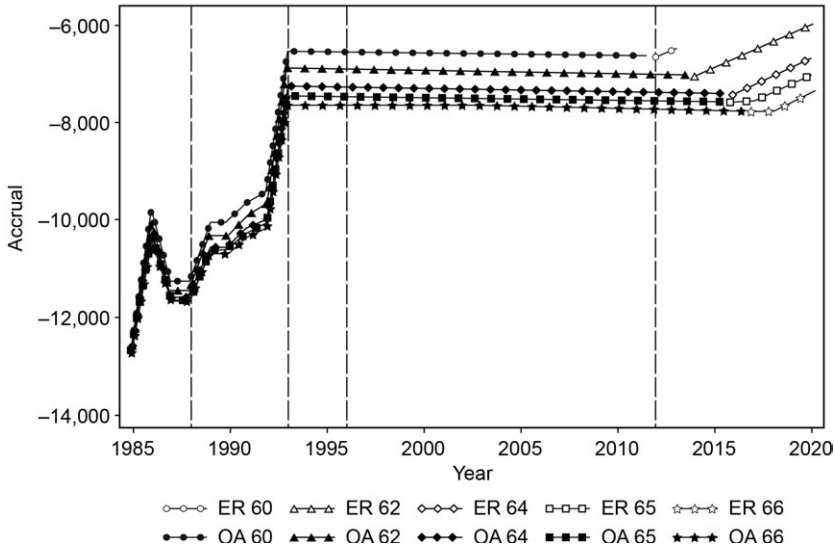


Fig. 6.A.3 Financial incentives for women aged 60–66, medium income, common earnings profile (net values)

C. Accrual



D. Implicit tax rate

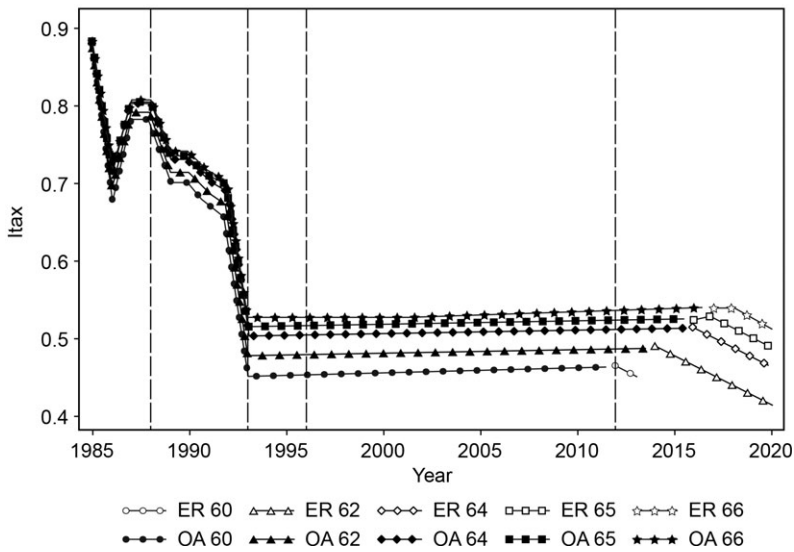


Fig. 6.A.3 (cont.)

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