OBSERVATORY ON 2019 GOVERNMENT SPENDING AND REVENUE

SUSTAINABILITY OF PENSION SPENDING AS PART OF AN ALTERNATIVE DEVELOPMENT SCENARIO

Edited by the Centro Studi e Ricerche Itinerari Previdenziali

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Foreword

This Report aims to provide an outlook over at least five decades ahead to describe the possible evolution of the impact of public pension spending on future resources. The following chapters will focus on such spending trends resulting from current legislation and expected population developments.

To determine the impact on resources, it is essential to have an idea of the possible evolution of GDP. Our economy has been experiencing a few decades of very low growth, increasingly weakened by the 2008 crisis. The long-term prospects calculated by foreign institutions (EPC-WGA, International Monetary Fund) point to a substantial stagnation of our economy for at least a quarter of a century. This is not so true for the State General Accounting Department (Ragioneria Generale dello Stato - RGS) of the Ministry of the Economy which, in its projections revised every year for the next twenty years, has assumed that a return to potential growth rates of around 1.5 per cent can be expected. This would be a more appropriate growth rate for a mature economy like ours with an ageing population second only to Japan.

To be able to achieve that potential growth rate again over the next 25 years, it will be necessary to act on the labour market, to address the problems of work/life balance for children and the elderly, school and university lifelong learning for all employees, not to mention the industrial structure and the institutions of civil society. We have no more than ten years to do this.

All these issues, which will allow the RGS's projections to be reasonably optimistic, are fully explored in this report.

Introduction

This study on the medium/long-term trends of pension spending, including references to other welfare functions, stems from the idea that it is ***essential to analyse the projections for the next few decades drawn up by national and EU bodies***, by rigorously examining the scenarios regarding population trends, employment, productivity and growth, in order to be able to assess their impact and the consequences that would result from a different possible development for our country. This analysis is very important for our country, since the opinions of international bodies and in particular, those of the European Union that have a profound impact on the evaluation of our economy depend on these forecasts.

From mid-2014 to the first half of 2018, thanks to the increase in both foreign and domestic demand, Italy has experienced a phase of positive growth, after many years of crisis, showing a recovery in the economy supported by positive data on ***employment*** and, as far as the central theme of this study is concerned, also with respect to the ***pension spending sustainability***[1].

Despite the good results, warnings from the European Union, the International Monetary Fund and the OECD, which have repeatedly feared unsustainable situations in the medium and long term, have not been lacking with regard to public accounts and especially pensions. While such concerns may be justifiable for some major issues, such as excessive public debt, very high and inefficient ***welfare spending*** and low employment rates, the ***same level of concern about pension spending may not be justified***. Here are some summary data that can better illustrate the challenges ahead:

a) ***Employment and population: a labour reserve to be mobilised***

In 1997, some 20.8 million people were employed; since then, there has been a significant increase, reaching a peak in 2008 of 23.1 million employed people. After several years of crisis, that figure fell to a low of 22.197 million on average in 2013. In 2017, as the economy recovered, we almost moved back to 2008 levels (23.014 million employed), which was exceeded in 2018 with around 23.223 million employed people on an annual average, i.e. the highest employment rate ever recorded for the population aged 15 to 64 (**58.7%**).

A moderately positive trend was also observed for female employment, which rose to 49.5% on average in 2018, which is 2.3 percentage points higher than 2008, when the crisis began. Over the same period, thanks mainly to pension reforms and the progressive increase in retirement age, the employment rate continued to grow in the 55-64 age group, from 34.3% in 2008 to 53.7% on average in 2018, with increases over the same period from 45.3% to 64.2% and from 23.9% to 43.9% for men and women respectively[2] (***Table 1***).

[1] It should be pointed out straight away that from the second half of 2018 and, with a view to 2019 as well, due to a number of factors that cannot be examined in these notes, growth appears to have slowed down at global level and even more so in Europe.

[2] Data taken from the 5th Report on the Budget of the Social Security System presented to the Government and Parliamentary Commissions on 21 February 2018, drawn up by the Centro Studi e Ricerche of Itinerari Previdenziali.

Table 1 – 2018 Employment Rates

Employment rates 15-64 years		Female employment rate 15-64 years		Employment rate 15-24 years		Employment rate 55-64 years	
GEO/TIME	2018	GEO/TIME	2018	GEO/TIME	2018	GEO/TIME	2018
Sweden	77,5	Sweden	76,0	Netherlands	63,9	Sweden	77,9
Netherlands	77,2	Netherlands	72,8	Denmark	57,3	Germany*	71,4
Germany*	75,9	Denmark	72,6	Austria	51,3	Denmark	70,7
Denmark	75,4	Germany*	72,1	Malta	50,4	Estonia	68,9
Estonia	74,8	Lithuania	71,6	Germany*	47,2	Lithuania	68,5
Czechia	74,8	Estonia	71,4	Sweden	45,1	Netherlands	67,7
Austria	73,0	Finland	70,6	Finland	44,0	Finland	65,4
Lithuania	72,4	Latvia	70,1	Estonia	41,7	Latvia	65,4
Finland	72,1	Austria	68,6	Ireland	40,3	Czechia	65,1
Latvia	71,8	Czechia	67,6	European Union***	35,4	Cyprus	60,9
Malta	71,4	Slovenia	67,5	Slovenia	35,2	Bulgaria	60,7
Slovenia	71,1	Portugal	66,9	Latvia	33,1	Ireland	60,4
Portugal	69,7	Cyprus	64,2	Lithuania	32,4	Portugal	59,2
Hungary	69,2	Bulgaria	63,9	Cyprus	31,3	European Union***	58,7
European Union***	68,6	European Union***	63,4	Poland	31,0	Hungary	54,4
Ireland	68,6	Luxembourg	63,4	France**	30,4	Slovakia	54,2
Cyprus	68,6	Ireland	63,3	France	29,9	Austria	54,0
Bulgaria	67,7	France**	62,5	Hungary	29,0	Italy	53,7
Slovakia	67,6	Hungary	62,3	Czechia	28,4	France**	52,3
Poland	67,4	France	61,9	Luxembourg	28,4	Spain	52,2
Luxembourg	67,1	Slovakia	61,2	Slovakia	27,5	France	52,1
France**	65,9	Poland	60,8	Portugal	27,2	Belgium	50,3
France	65,4	Malta	60,8	Croatia	25,6	Malta	49,7
Romania	64,8	Belgium	60,7	Belgium	25,0	Poland	48,9
Belgium	64,5	Spain	56,9	Romania	24,7	Slovenia	47,0
Spain	62,4	Romania	56,2	Spain	21,7	Romania	46,3
Croatia	60,6	Croatia	55,9	Bulgaria	20,7	Croatia	42,8
Italy	58,5	Italy	49,5	Italy	17,7	Greece	41,1
Greece	54,9	Greece	45,3	Greece	14,0	Luxembourg	40,5

(until 1990 former territory of the FRG) ** (metropolitan) * (current composition)*
Source: EUROSTAT

Despite ageing, the population has continued to grow. More specifically, in 1997 the number of residents was 56.9 million, while by the end of 2018 it had risen to around 60.4 million and, according to the ISTAT median scenario (see chapter 3), it is expected to remain so for the next few years, with a reduction expected to be around 56/57 million in 2050.

As for employment, if we consider the average value of the population aged 20-64 in European countries (72.2% in 2017) and the objective of the "Europe 2020 Strategy", which has set the total employment rate at 75%, we can observe that the "reserve of unused labour force" in Italy appears to be very large[3]. In addition, there is still a serious problem of unemployment, since at the end of 2018, jobseekers accounted for 10.3% of the workforce. A significant share of unemployment is attributable to structural weaknesses in the Italian labour market (poor adaptability to change and insufficient level of specialisation) which tend to widen the mismatch between labour supply and demand. In this regard, recent analyses estimate a shortage of about 65,000 skilled workers required from industry and a few hundred thousand from craft and service activities, only partly filled by immigrant workers[4]. In addition, a significant percentage of undocumented and illegal work is estimated at around 3 million workers.

[3] In theory, if we consider that in Italy at the end of 2018 the population aged 20-64 was 35.861 million and that the current gap between the Italian employment rate and the average European employment rate is 9.9 percentage points, we can estimate that the potential "labour reserve" amounts to 3.550 million units.

[4] The 5th Report on the Budget of the Social Security System presented to the Government and Parliamentary Commissions on 21 February 2018, drawn up by the Centro Studi e Ricerche of Itinerari Previdenziali has highlighted that more than 600,000 unemployed people are immigrants with extremely low skills.

b) Pension and Pensioner Spending

The dynamics of GDP, which grew in nominal terms to an average of 1.8% per year over the period 2014-2018, and the sharp slowdown in total pension spending, which increased by 0.92% per year over the same period, have allowed the *pension spending-to-GDP ratio* to stabilise over the last five years.

In 2017, the *number of pensioners* - ***16,041,852*** - decreased by 22,656 compared to the previous year (between 2016 and 2015, the decrease was of 114,869 units), making it the lowest of the last 21 years after the peak of 16.779 million recorded in 2008. In 2018, another drop of about **26,000** units was estimated (***Table 2***), while for 2019, with the introduction of the so-called "rule of 100" (*quota cento*), which allows early retirement for workers with fewer requirements than those in force in 2018, an increase is expected, but this will be recouped in three to four years.

In 2018, the highest value of the last 22 years was reached in the *employed people/pensioners ratio* with ***1.45*** employed people per pensioner (compared to **1.35** in 2013). Figures for 2018 are close to 1.5 employed people per pensioner, which can be achieved with appropriate policies to encourage new employment. Such a ratio would not solve all the problems but would reach a level more proportionate to the goal of achieving financial sustainability for the pension system.

Last but not least, it should be noted that actual pension spending, i.e. net of cash transfers for welfare services, has increased annually over the last five years by **0.7**%, one of the lowest figures since the mid-1990s when reforms of the pension system began.

Table 2 - Trends in the main system indicators

YEARS	1997	2002	2008	2013	2016	2017	2018
Total cost of benefits	122.948	144.249	185.035	214.567	218.504	220.842	223.400
Total contribution income	104.335	132.201	183.011	189.207	196.522	199.842	202.500
Balance	-18.613	-12.048	-2.024	-25.360	-21.982	-21.000	-20.900
Total Spending/GDP Ratio	11,28	10,72	11,34	13,37	13,00	12,83	12,84
Number of employed workers	20.857.572	22.229.519	**23.090.348**	22.190.535	**22.757.838**	**23.022.959**	**23.170.000**
No. of pensioners	16.204.568	16.345.493	**16.779.555**	16.393.369	16.064.508	16.041.852	16.015.000
Number of pensions	21.627.338	22.650.314	23.808.848	23.316.004	22.966.016	22.994.698	22.995.000
Number of residents in Italy	56.904.379	57.321.070	60.045.068	60.782.668	**60.589.445**	**60.483.973**	**60.483.000**
No. of employed people per pensioner	1,287	1,360	1,376	1,354	**1,417**	**1,435**	**1,4468**
Number of pensions per pensioner	1,335	1,386	1,419	1,422	**1,430**	1,433	1,4358
Population/pension ratio	2,631	2,531	2,522	2,607	**2,638**	2,630	2,630
Average annual amount of pension	7.189	8.357	10.187	11.695	12.297	12.478	
Adjusted amount per capita	9.583	11.581	14.454	16.638	17.580	17.887	
GDP (value at current prices in millions)	1.089.869	1.345.794	1.632.151	1.604.599	1.680.523	**1.720.856**	**1.739.785**

Considering the situation outlined above, it is only fair to ask why the European Union and other international bodies are issuing frequent warnings about the stability of the Italian system. From a preliminary look at the long-term projections of pension spending to GDP ratio, it can be assumed that one of the main reasons for these concerns depends on the most recent updates of the population projections: the "***2016 Population Review***" carried out by Istat[5], which was used in the quantitative analyses carried out using the model of the General State Accounting Department (MEF-RGS) and the 2100 population projections carried out by Eurostat in 2018[6], which were used as a benchmark for the projections of the *Economic Policy Committee - Working Group on Ageing* (EPC-WGA)[7]. This working group on the economic and financial challenges associated with ageing provides the Commission with benchmark projections for the analysis of the medium and long-term sustainability of public finances, which is one of the key assessment parameters within Ecofin. In these population reviews, the picture outlined by EPC-WGA for our country is severely penalized in terms of growth for several reasons, including mainly:

- a reduction in the net flow of immigrants is assumed, originally estimated by Eurostat at 360 thousand per year up to 2040[8] and, after the review, forecasts both a net annual reduction of 191 thousand with a slight reduction up to 2070. In addition, the estimate takes into account the negative effects of ageing on the population structure but maintains low fertility rates (1.4% in 2030 compared to the current 1.32% given a lower percentage of women in childbearing age).

[5] It should be noted that in 2017 there was another Istat review that pushed the basis of the forecasts to 1.1.2017; Istat forecasts up to 2065 available on demo.istat.it indicate that the net contribution of migration shall increase from about 130,000 in recent years to 220,000 in 2039 and will subsequently drop to 130,000 in 2080.

[6] Eurostat, *Population projections (proj) Reference Metadata in Euro SDMX Metadata Structure (ESMS). Methodology of the 2018-based population projections* (EUROPOP2018).

[7] To avoid confusion, it should be noted that in the publications of the European Commission mentioned in other notes of this report, the working group on ageing is referred to as the Ageing working group, with the corresponding acronym AWG, instead of WGA used here in comparison with the MEF-RGS publications. The WGA, whose full name is "*Working Group on Ageing Populations and Sustainability*", is one of the four working groups of the Economic Policy Committee (EPC) and was set up with the aim of improving the quantitative benchmarking of economic policy measures concerning the long-term sustainability of public finances and the economic consequences of population ageing in the EU Member States.

[8] However, this estimate, which was made on the basis of past amnesties, seemed difficult to realize because the integration of 360 thousand people per year would cause serious problems of social cohesion in Italy.

- The projection does not take into account any improvement in employment levels or even a possible increase in productivity. By 2030, the scenario forecasts a 9% unemployment rate and a 61% employment rate (62.7% in the national baseline scenario of MEF-RGS), although already today, with a large share of unemployed people and inadequate employment policies, especially for women, the total employment rate in Italy is 58.5% (59% in June 2019). For the entire review period to 2070, the projection also forecasts negative productivity in the first 10 years followed by a slow positive trend of 0.3% per year on average (0.9% in the MEF-RGS[9] baseline scenario).

Within this forecast framework, as further elaborated in the following sections, pension spending, which is currently reported in the WGA scenario at 15.6% of GDP[10], would even rise to 18.4% in 2042, i.e. the maximum projection value for 2070. If we assume that these projections are in line with reality, our country would inevitably be subject to a progressive decline that could jeopardise the sustainability of the entire welfare system. More or less explicitly, that is, based on Eurostat data, the European Union's governance institutions are suggesting that Italy will never achieve some of the fundamental Lisbon 2020[11] objectives and that, in a not too distant future, pensions for the elderly might no longer be guaranteed or, more generally, other fundamental features of the social protection system could not be kept alive.

Given the substantial importance of the consequences arising from this "scenario", this study is therefore aimed at analysing both the consistency of the quantitative data and the likelihood of the concepts of the projection models currently adopted[12]. This analysis begins with an in-depth assessment of the different scenarios considered by the MEF - RGS model for the national baseline scenario and by the ECP WGA model for a Europe-wide comparative review. The dynamics of the population framework, the variables relating to employment and the labour market and, finally, the macroeconomic variables that most affect the long-term projections, i.e. productivity and economic growth, are then assessed below.

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[9] For the definition and updated contents of the "baseline national scenario" see paragraph 1.2 - "The national scenario" on p. 28 et seq. of: MEF-RGS, *Le tendenze di medio-lungo periodo del sistema pensionistico e socio-sanitario. Previsioni elaborate con i modelli della Ragioneria Generale dello Stato aggiornati al 2018 (*Medium/long-term trends in the pension and social-health system. Forecasts drawn up with the models of the General State Accounting Department updated to 2018). "Report no. 19", Rome, July 2018.

[10] In the definition adopted by Eurostat - Esspros (European System of integrated Social Protection Statistics), the term 'Pensions' includes part of the periodic cash benefits relating to disability, old age, survivors' and unemployment schemes. It refers to the following social benefits: *disability pension, early retirement due to reduced employability, old-age pension, early old-age pension, partial pension, survivor's pension, early retirement allowance for labour market reasons*. The most recent figure regarding the pension spending/GDP ratio in Italy is **16.2**%. This data is updated to April 2019 and refers to 2016. As explained later in this study, the term "pension spending" adopted for Italy raises some questionable methodological issues, as it can be considered inconsistent with an appropriate definition of this type of spending.

[11] Please note that the objectives set were: (i) a 75% employment rate for the 20-64 age group; (ii) an investment in research and development of 3% of the EU's GDP; (iii) a 20% reduction in greenhouse gas emissions compared to 1990 levels, with 20% of energy needs coming from renewable sources and a 20% increase in energy efficiency; (iv) reduction of the school drop-out rate to below 10%, with at least 40% of 30-34 year olds completing post-secondary education; (v) reduction of the number of people at risk or in a state of poverty and social exclusion in EU countries by at least 20 million.

[12] A critical review of the criteria used by the WGA working group in formulating the scenarios was already included in a RGS publication. See: paragraph 5 "The EPC-WGA baseline scenario", p. 13-14, in MEF-RGS, *Le tendenze di medio-lungo periodo del sistema pensionistico e socio-sanitario. Previsioni aggiornate al 2017 sulla base del nuovo quadro demografico Istat e dei nuovi scenari demoeconomici definiti in ambito UE (*The medium/long-term trends of the pension and social-health system. Forecasts updated to 2017 on the basis of the new ISTAT demographic framework and the new EU-developed demoeconomic scenarios). "Report No 18. Anticipazioni", Rome, June 2017.

*The importance of this analysis is to be attributed to the fact that the coordination of welfare policies in Europe, although leaving the adoption of specific measures to the autonomy of the member countries, has become more significant[13] over time and that, with the so-called "**country-specific recommendations**", the Commission and the European Council can significantly influence the policies of individual countries.*

[13] The intention to consolidate the coordination instruments for social protection policies is also demonstrated by the final adoption of the so-called "*European Pillar of Social Rights*", ratified by a joint declaration of the EU institutions (Parliament, Commission and Council) at the Social Summit for Employment and Growth held in Gothenburg on 17 November 2017.

1. Pension spending projection models: scenarios and results

With regard to international comparisons concerning the long-term trend of pension spending, Italy uses a projection model drawn up and periodically updated by the State General Accounting Department (RGS). The management of this model is part of the forecasting activities carried out by the Ministry of the Economy and Finance (MEF) on the long-term evolution of the social spending items most affected by population ageing[14]. The comparative analysis between the countries belonging to the European Union is the task of the Economic Policy Committee (EPC), an institution of the Ecofin Council which, as mentioned above, for the economic problems linked to ageing, relies on an ad hoc working group, the Working Group on Ageing (WGA), within which both the methodological aspects and the reliability of the data included in the projection models are agreed upon. Other bodies regularly consulted are the OECD for the preparation of reports on Italy and the International Monetary Fund (IMF) for the questionnaires that are filled in during annual missions. Recently, the IMF itself, as part of a more detailed analysis of Italian public finances, published projections regarding the incidence of pension spending on GDP in the medium to long term, *applying different population and economic assumptions* to the model used by RGS and WGA[15].

The development and first applications of the RGS forecast model date back more than twenty years[16]. Over time, the model has undergone several updates that have concerned various profiles including: population forecasts, which from the initial analysis of the RGS itself have subsequently moved to Istat projections based on population censuses; the methodology for recording retirement flows and average pension amounts; the indications of the regulatory framework; the calculation functions. The updates have progressively led to the structure of the model currently used for the forecasts which, in recent years, have been extended to a period of more than half a century, up to 2070. It should also be noted that since 2000, two separate "scenarios" have been used in the publications describing the methodological aspects and results of the projections[17] to define the assumptions.

The first one, known as the "*Baseline National Scenario*", uses national accounts data for the *short term*, i.e. for the forecasting period of the Government Economic Planning Documents, and adopts national scenarios for the long-term projections.

The second model, referred to as the "*EPC-WGA baseline scenario*", uses the same data for the short term, while the variables concerning structural changes are quantitatively determined by the European group mentioned above[18].

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[14] In addition to pension spending, projections include health care and long term care (LTC) spending. There are no projections for *public education* spending which are instead included in the European Commission's reports.

[15] Andrle M., Hebous S., Kangur A. e Raissi M., *Italy: Toward a Growth-Friendly Fiscal Reform*, IMF WP/18/59, March 2018.

[16] Ministry of Economy and Finance - RGS, *Tendenze demografiche e spesa pensionistica*, "Conti pubblici e congiuntura economica", quaderno monografico n.9, Rome, 1996; Ministry of Economy and Finance -RGS, *Dinamiche demografiche e spesa pensionistica: il caso italiano*, Rome, March 1998; Ministry of Economy and Finance-RGS, *Aggiornamento del modello di previsione del sistema pensionistico della RGS: le previsioni '99*, Rome, June 1999.

[17] MEF-RGS, Le tendenze di medio-lungo periodo del sistema pensionistico italiano, Quaderno n. 2, November 2000.

[18] The description of the model used by the WGA can be found in: European Commission, *The 2018 Ageing Report. Economic & Budgetary Projections for the 28 EU Member States* (2016-2070), "European Economy", Institutional paper no. 079, May 2018. The theoretical and methodological aspects used for the formulation of the assumptions agreed within

Estimates made by long-term projection models are justified by the assumption that pension spending, more specifically its percentage of GDP, is the most suitable measure for assessing the financial sustainability of social security systems and, consequently, given the significant amount of public spending on pensions, its GDP ratio is also a key indicator of the sustainability of public debt[19]. Although the time profile of the curve outlining the incidence of pension spending on GDP is substantially similar[20] in the different models tested, there are significant differences in the maximum values reached by the curves over the period considered, as a result of the assumptions on which projection results are based. The importance of these differences is highlighted by the fact that, both for national public decision-makers and for the international observers most directly concerned with our country's public finance trends, a different impact of pension spending may imply the need to deliberate on new reforms or, in any case, to apply or not apply further restrictive measures.

A detailed analysis of the hypotheses used in the various "scenarios" and their degree of reliability, i.e. the objective set in this study, is therefore an essential step to be able to assess the consistency and effectiveness of the policies regarding the Italian social security system, both with respect to what has been implemented in recent years and for any measures to be adopted in the future.

The RGS Reports, which, with a few exceptions, update the estimates on an annual basis, illustrating the methodological aspects, the data used and the results of the long-term projections, are included in the documentation that the EU Member States are required to prepare as part of the European multilateral surveillance procedure, the so-called "European Semester". As a rule, the RGS projection model is updated before the expiry of the Economic and Financial Document (DEF). In 2018, a preliminary study was carried out using the population parameters underlying the median scenario drawn up by ISTAT based on 2016, taking into account the legislation currently in force and, for the first years, the macroeconomic framework as at 2021 envisaged by the 2018 DEF[21].

The model was subsequently updated to incorporate the new Istat population forecast based on 2017, which was made public in early 2018[22]. The results of this update were published in the RGS Report of July 2018 which, as is now customary, contains long-term forecasts for pension, health care and long-term care spending[23]. It should be underlined that the focus on the contents of this report is

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the WGA can be found in European Commission, *The 2018 Ageing Report. Underlying assumptions & projection methodologies*, "European Economy", Institutional paper no. 065, November 2017.

[19] For more information on the impact of pension spending and the reclassification of social spending, see chapter 2.

[20] Long-term curves, for the reasons set out in the RGS Reports, generally tend to rise up through the years between 2040 and 2045 and then fall back in the final year to levels close to the values of the starting year. Such a pattern depends, to a large extent, on the way in which the pension contributions are calculated. In particular, it can be demonstrated that, even in the case of a progressive decrease in the share of income subject to contribution in the total value added, given the same contribution rate, a financial imbalance is evident between pension spending and contributions, although pension spending to GDP ratio remains constant. In this regard, see G. Geroldi, *Le riforme del sistema previdenziale italiano*, "Working Papers Department of Economics", University of Parma, WP 9/2001. The demo can be found on page 87 et seq. of the updated edition in: https://www.researchgate.net/publication/5223675_Le_riforme_del_sistema_previdenziale_italiano).

[21] A summary of the expected results is provided in a special "Focus" entitled *Le tendenze di medio-lungo periodo delle spese pubbliche connesse all'invecchiamento e del sistema pensionistico italiano* contained in the Economic and Financial Document (DEF) 2018, Section 1 Stability Programme of Italy, p. 87 et seq., Rome, April 2018.

[22] Istat, *Il futuro demografico del Paese: previsioni regionali della popolazione residente al 2065*, (base 1 January 2017), "Statistiche report", Rome, 3 May 2018.

[23] Projections with updated population data are available in MEF-RGS, *Le tendenze di medio-lungo periodo del sistema pensionistico e socio-sanitario. Previsioni elaborate con i modelli della Ragioneria Generale dello Stato aggiornati al 2018*. "Rapporto n. 19", Rome, July 2018.

essential for the in-depth analyses presented in these notes, since, in addition to various interesting considerations[24], it contains the essential elements for comparing the effects deriving from the underlying assumptions of the different scenarios.

More recent estimates have been elaborated for the 2019 DEF[25]. In this document, the projections of the pension spending to GDP ratio are presented in separate files. There are two *focus sections* dedicated to the long-term trend of pension spending: Section II *Analysis and trends of public finance* refers to the national scenario, while Section I on the *Italian Stability Programme* refers to the projection based on the *EPC-WGA Baseline* scenario, also in the chart that illustrates the effects of the reforms that have taken place under Law 243/2004 and onwards, specifying that in this scenario the indications of the trends of the 2019 Stability Programme are included in the short term, although the reasons why the estimates do not directly compare the hypotheses of the two different scenarios are not explained.

Aside from this difficult way of reporting the results of long-term projections, the content of the latest projections should be highlighted because they incorporate the short/medium-term effects resulting from the most recent regulatory changes[26] and, in particular, from the experimental introduction, for the period 2019-2021, of the new early retirement scheme available to workers with joint requirements of at least 62 years of age and minimum 38 years of social security contributions (defined as the "rule of 100").

The incidence of this measure obviously has an impact on pension spending. In fact, the new regulation significantly alters a trend in spending that in recent years has shown substantial stability in growth rates with annual fluctuations below GDP rates[27].

With regard to GDP growth, i.e. the variable that is the denominator of the ratio estimated in the projection models, it should be noted that, with reference again to 2001-2022 trends, that is, from the time when the first RGS projections appeared up to the forecast data of the latest DEF, rather unstable trends can be observed, which show the real difficulty of obtaining reliable trend values to be projected over the long term[28].

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[24] The most important issues concerned: the financial effects of the reforms adopted since 2004, the revision of the transformation coefficients and the adjustment of the requirements for access to retirement; the distributive effects of the public pension system; the gross and net replacement rates of compulsory and supplementary pensions; the sensitivity analysis on the impact of alternative assumptions in the population and macroeconomic scenario.

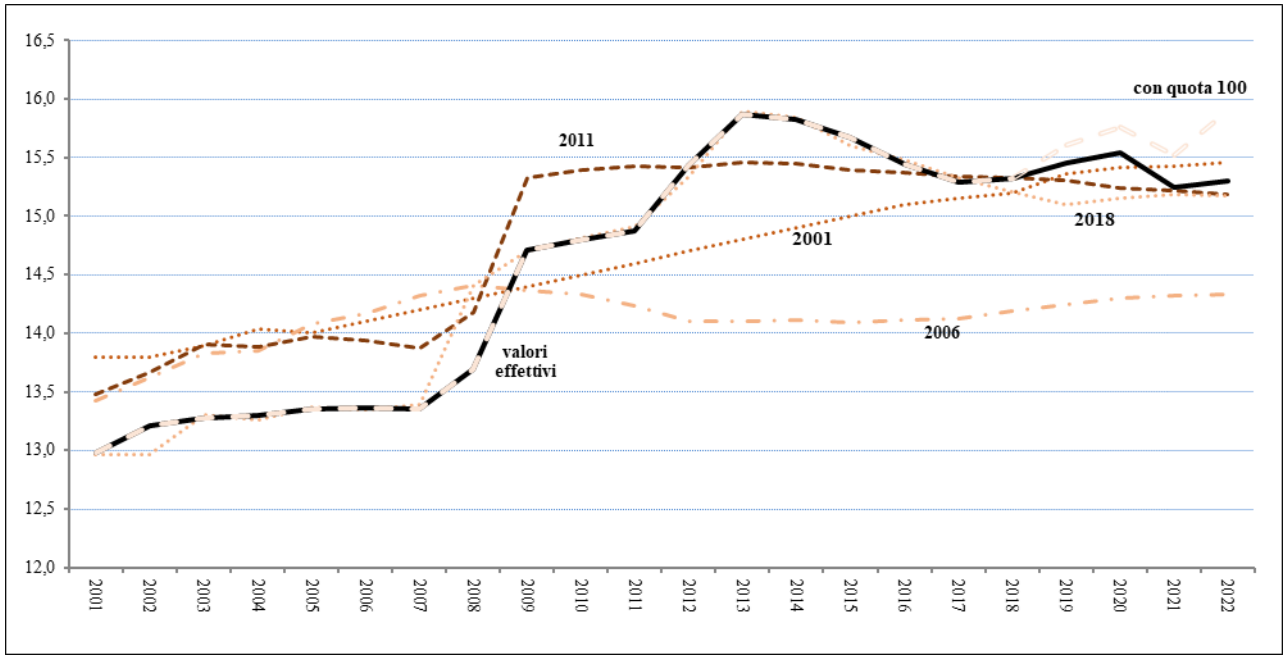
[25] MEF, *Documento di Economa e Finanza 2019*, Rome, 9 April 2019. On page 100 et seq. you can find the "Focus" entitled *Le tendenze di medio-lungo periodo del sistema pensionistico italiano*, in which the RGS projections have been updated to take into account Decree Law no. 4/2019, which transposed the provisions contained in the Budget Law 2019 (Law no. 145/2018).

[26] Among the new provisions, it is worth mentioning that the requirement of contributory seniority for early retirement independent of age is maintained at 42 years and 10 months for men and at 41 years and 10 months for women, and that the related adjustments to life expectancy are frozen for the period 2019-2026. In addition to these requirements, three months must be added to the starting date of the pension scheme. The freeze on the adjustment to life expectancy for the period 2019-2026 also applies to so-called "precocious" workers who retire with a contribution period of 41 years.

[27] See: Itinerari Previdenziali (edited by Centro Studi e Ricerche), *Il bilancio del sistema previdenziale italiano. Andamenti finanziari e demografici delle pensioni e dell'assistenza per l'anno 2017*, Milan, February 2019.

[28] From 1999 to 2018, the average values of the five-yearly GDP change rates were the following: 1.55%, 1.08%, minus 1.55% and 0.93% respectively.

Figure 1.1 - RGS model projections and actual values of the pension spending to GDP ratio *



actual values – with the rule of 100

** The values for the period 2019-2022 are estimates based on the forecasts contained in the 2019 DEF*

Figure 1.1 shows the projections made with the RGS model in four different stages (2001, 2006, 2011, 2018) and the same projections are compared with the historical trend of the pension spending to GDP ratio. The results for the four-year period 2019-2022 are based on the estimates contained in the 2019 DEF. Looking at the subsequent model projections and the actual results of the report, it can be noted that the two factors mentioned above, namely regulatory measures and the instability of the economic cycle, lead to significant deviations even in relatively short periods of time.

More specifically, it is shown that the values estimated in 2001 and 2006, as they could not yet incorporate the effects of the interventions on pensions that took place in the following decade[29], tended to overestimate the actual values, until 2009, when the sharp slowdown in economic growth during the crisis caused the opposite effect, i.e. an underestimation of the actual value of the pension spending to GDP ratio. The projection made in 2011 also showed an initial overestimate of the amounts over the following decade, as it did not yet include the important effects of spending cuts due to Article 24 of Decree-Law No. 201/2011 (Monti Fornero reform), while in the second period the effects of the continuing crisis on GDP dynamics were underestimated.

In a prospective view, based on the DEF 2019 estimates[30], the trends in ***Figure 1.1*** show that even the most recent projection of the RGS model, published in July 2018, risks being disrupted already

[29] References are: Delegated Law no. 243/2004; Law no. 247/2007; Law Decree no. 78/2010 (converted into Law no. 122/2011); Law Decree no. 98/2011 (converted into Law no. 111/2011); Law Decree no. 138/2011 (converted into Law no. 148/2011). The most important impact on pension spending of these regulations concerned the adjustment of transformation coefficients, the retirement age and the linking of age requirements to life expectancy.

[30] The estimates of the DEF 2018 published on 26 April 2018, which were used as a reference in the latest published projection of the RGS model, recorded an average GDP growth until 2021 of 1.38% per year. The most recent economic trend has led the main institutions (Government, Istat, Bankitalia, OECD) to significantly revise their GDP estimates downwards. The most recent 2019 DEF (April 2019) indicates an average annual GDP growth rate of 0.57% for the same four-year period.

in the early years, both because of the continuation of the abrupt and unexpected slowdown in the economy, and because of the impact on spending of the early retirement measure ("rule of 100") introduced the year following the estimate.

If the economic variables and the regulatory component, given their difficult predictability, are therefore likely to affect the results of the projections even over a not overly long period of time, it is equally important to make some general considerations on the population parameters. With regard to this component, it should be noted that the most recent RGS projections have taken into account the long-term population estimates made by Istat based on 2017. As regards this choice, it should be pointed out that since 2016 Istat has adopted a new methodology using a stochastic approach. This method consists in preparing a wide range of simulations by randomly applying year on year the value of population parameters identified within confidence intervals underlying probabilistic distributions. *While the new methodological approach allows the variability of population forecast results to be assessed in relation to the degree of uncertainty of the population parameters, it also makes the results unsuitable for use as a population basis for derived projections*. To meet this need, Istat has developed a specific population forecast, in addition to stochastic simulations, referred to as the "median" population. In fact, this forecast follows a more traditional deterministic approach using population parameters defined according to the median value of the distributions used for stochastic simulations. Beyond the methodological innovations and the updating of the baseline year, the details of the population parameters have shown significant variations with respect to previous projections that have major effects, especially on the structural dynamics of growth. Taking this set of considerations into account, the terms of reference used for the projections of the pension spending to GDP ratio in the "baseline national scenario" can be briefly recalled below:

regulatory framework updated by Decree No. 4/2019: new temporary measure for early retirement ("rule of 100"); freezing until 2026 of the adjustments to life expectancy of the seniority requirements for early retirement independent of age and for "precocious" workers; retaining the so-called "Opzione Donna", i.e. the possibility for women who, having at least 35 years of contributions, reach by 31 December 2018 the age of 58 if they are employees or 59 if they are self-employed in order to be eligible for early retirement, with a pension calculated entirely through the contribution system.

Population picture: Istat 2017 baseline[31] ("median" population) where: i) the *fertility rate* is increasing almost linearly from 1.34 in 2016 to 1.59 in 2070; ii) *life expectancy* in 2070 will reach 86.5 years for men and 90.6 years for women, with increases of 6.4 and 6.0 years compared to 2015; iii) the *net migratory flow* from 2020 to 2070 will rise at an average annual level of about 160 thousand units, with decreasing values from over 180 thousand to less than 135 thousand towards 2070[32].

Macroeconomic picture: i) increasing rate of *productivity growth*, from the initial annual average values close to 0.2% up to an annual average level of 1.6% between 2040 and 2050, which

[31] The time horizon of the Istat population forecast based on 2016 extends to 2065. The population values for the five-year period 2066-2070 are determined on the basis of trends from the previous decade.

[32] A further update of the Italian population projections to 2065 is reported in: Istat, *Il futuro demografico del Paese: previsioni regionali della popolazione residente al 2065* (base 1.1.2017), "Statistiche report", Rome, 3 May 2018. The deviation of the median projection to 2065 between baseline 2016 and the latest update is less than half a million residents, from 53.66 million in 2016 baseline to 54.1 million in 2017.

is reduced to 1.5% in the last decade; ii) *total unemployment rate* from 9.7% in 2020[33] to 5.5% in 2070; still at 2070, the *total employment rate* (male and female) in the age group 15-64 is expected to rise to 70.8% with an increase of about 5.1 percentage points compared to the average value of 2020. Over the same period and for the same age group, the *employment rate* is expected to increase by about 7.2 percentage points to 66.4% in 2070[34].

A comprehensive update of the technical bases also covered the long-term projections that are carried out at European level for comparisons between Member States. *These projections, on which - it should be noted - the European Commission's "policy recommendations" towards individual countries depend, use, as already mentioned, the "EPC-WGA baseline" scenario[35] which, in its most updated form, is based on population and macroeconomic assumptions agreed within the WGA itself and on age-related public spending forecasts for 2018*. The "EPC-WGA baseline" scenario differs from the "National Baseline Scenario" of the RGS as far as the population component[36] is concerned and, much more significantly, in terms of the scenarios on the evolution of the economic framework[37].

With regard to the long-term projection of the Italian population, the population parameters in Eurostat's data only partially differ from those used by the RGS for the 2017 ISTAT base; however, they differ significantly from the projections previously used for the analysis of the sustainability of public finances (Europop 2013)[38], highlighting a substantial deterioration in the total population dynamics and in the parameters of population dependence and ageing. More in detail, the following differences emerge from the comparison between Istat and Eurostat **population parameters**

- fertility rates are lower than those of ISTAT until 2050 and have become higher in the last 20 years (Figure 1.2);

[33] In the 20-69 age group, which is more representative of the working age population in the long run, the employment rate reaches 74.8% in 2070, with a 10.9 percentage point increase.

[34] Overall, apart from the effects caused by population trends, the changes to the projections for the structural development of labour market variables in the update are limited and mainly depend on the update of the database that feeds into the employment rate forecast module, which reflects the interaction between schooling, education levels and labour market participation.

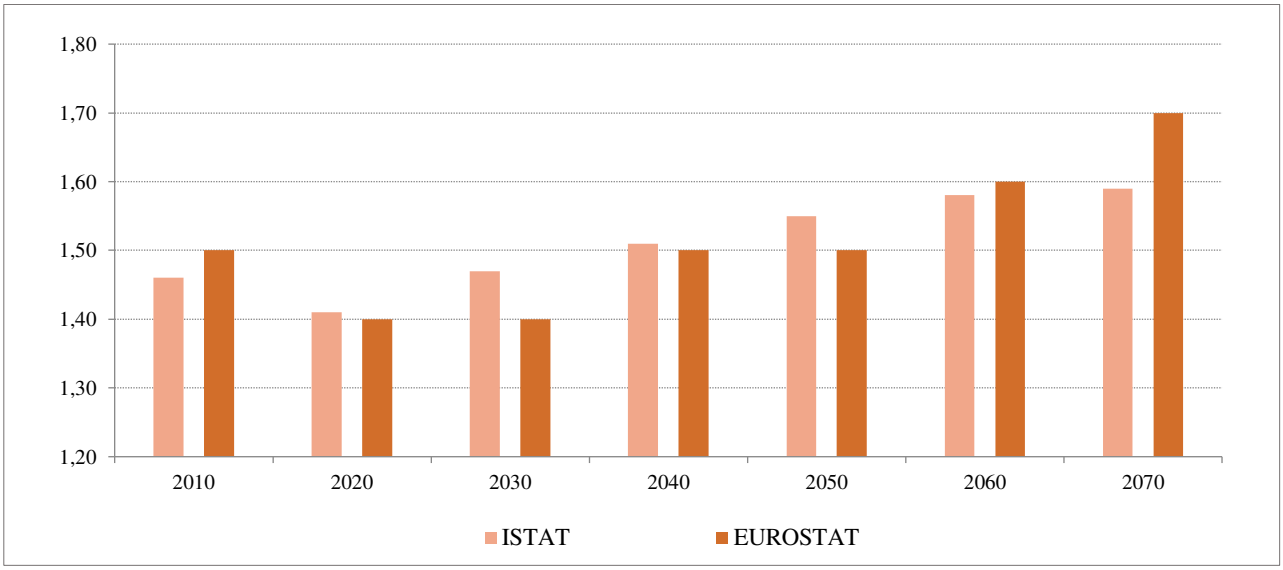
[35] It should be noted that the last projection comparing the European model with the WGA model was published in July 2018. The projection presented in the 2019 DEF uses the same values for all the parameters of the model, except for the update of the estimates to take into account the short/medium-term financial impact of the regulatory changes introduced by the latest Budget Law.

[36] Eurostat's population forecasts are made in close cooperation with the statistical institutes of the Member States, which are responsible for the national population forecasts. Eurostat published the latest population forecast at the end of February 2017, thus incorporating, with some significant changes, the assumptions underlying the Istat population forecast based on 2016.

[37] The variables of the macroeconomic framework have been elaborated by the Commission on the basis of choices and indications adopted in EPC which, among other things, have provided for the use of the methodology defined in the OGWG (Output Gap Working Group), for the estimates of productivity and unemployment rate, and the use of the simulation model for cohorts developed by WGA, to forecast employment rates.

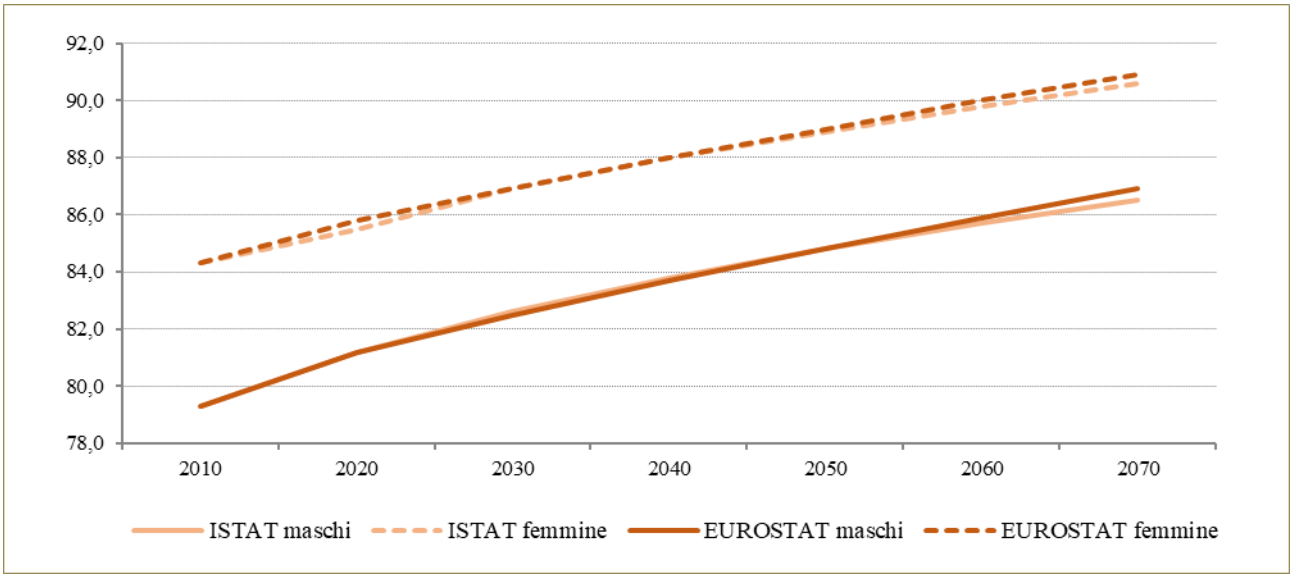
[38] Compared to the forecast (Europop 2013), Eurostat, in line with Istat base 2016, has assumed a sharp reduction in the net flow of immigrants. For the first 25 years of the forecast period, the average annual level goes from 360 thousand to less than 190 thousand, with a 47% decrease. Also as a result of the reduction in the fertility rate, population by 2060 (the final year of the previous projection) is reduced by more than 9 million and the old-age dependency ratio increases by more than 8 percentage points.

Figure 1.2 - Fertility rates (average values of the past decade)



– the *life expectancy* of men and women has almost comparable upward profiles, with a slight increase for both in the last 15 years of the Eurostat projection (***Figure 1.3***);

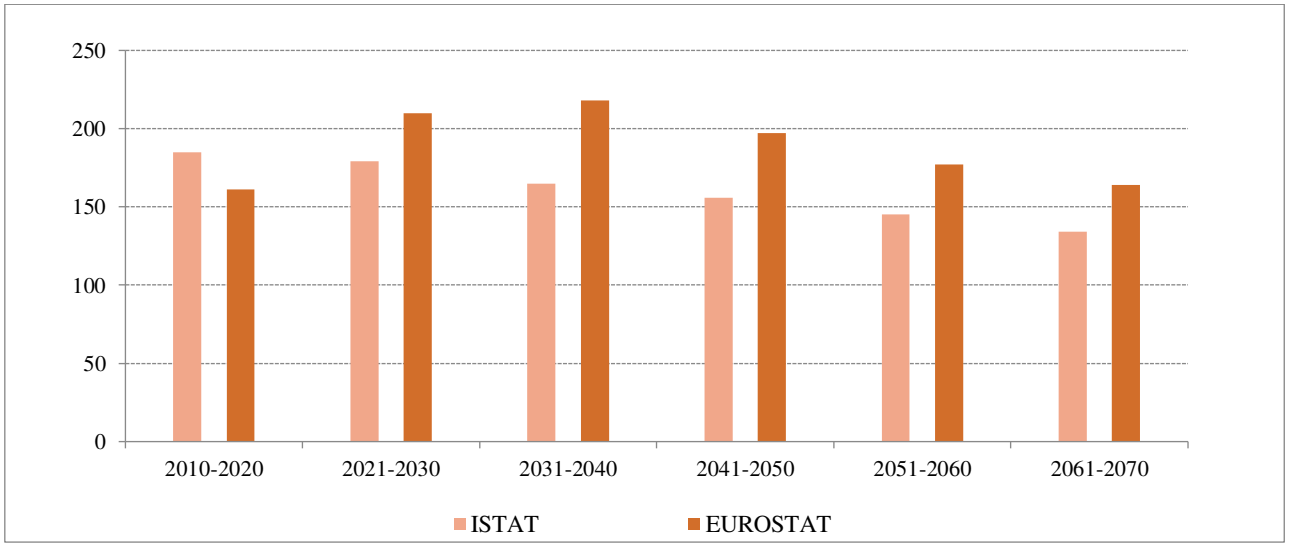
Figure 1.3 – Life expectancy at birth



ISTAT men – ISTAT women – EUROSTAT men – EUROSTAT women

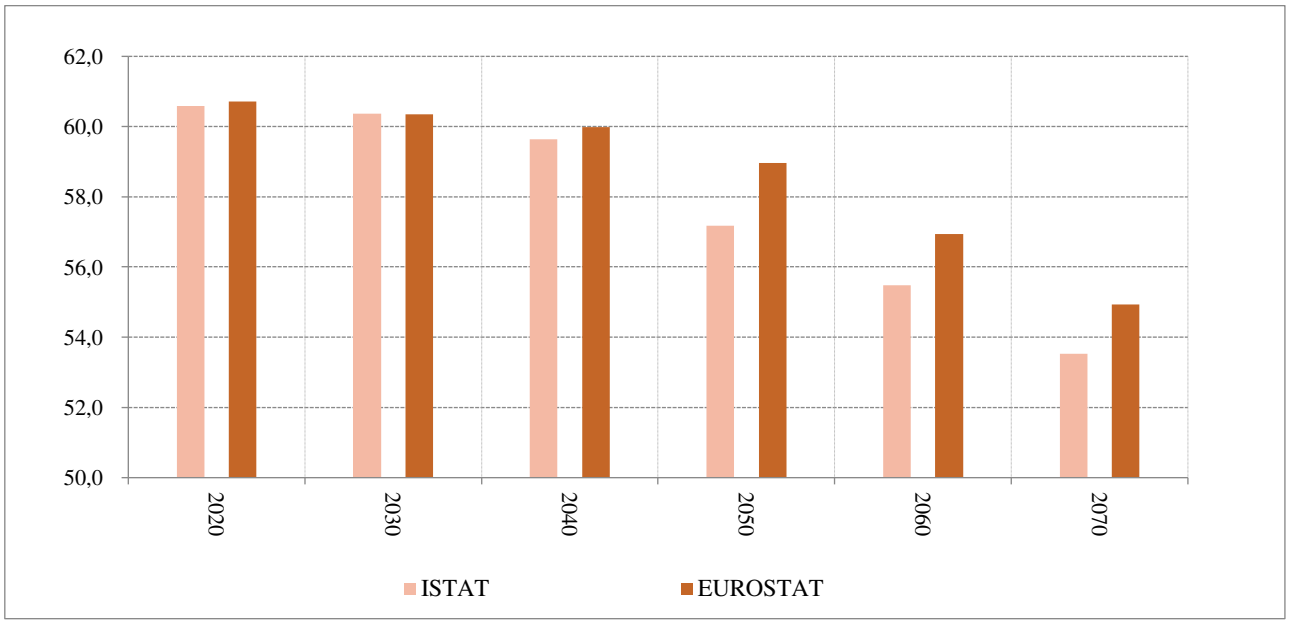
– *Migratory flows* follow fairly similar dynamics in profile, but absolute values are significantly higher in the Eurostat projection until 2040. If we add up the annual average numbers, net immigration of the Eurostat projection over the period 2020-2070 exceeds by more than 1.3 million people that of Istat (***Figure 1.4***);

Figure 1.4 - Migration balance (averages per period)



- *total population* tends to decrease from 2020, with a more significant reduction in the median Istat projection compared to Eurostat values. In 2070, the difference is of about 1.4 million people, 54.9 million for Eurostat, 53.5 for ISTAT, with more than 75% attributable to the different impact of the migratory flows in the two projections[39] (***Figure 1.5.a***);

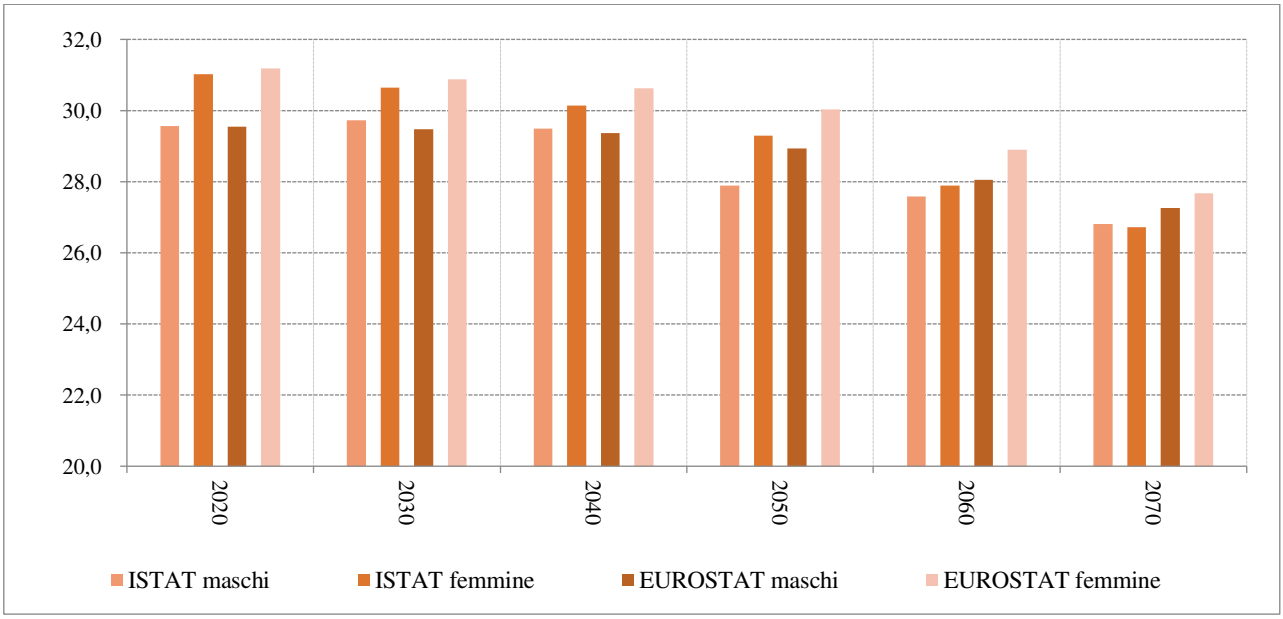
Figure 1.5. – Total population (2018 projections)



- the *population by gender* in the two Istat and Eurostat projections shows quite different dynamics. In fact, *according* to ISTAT, the reduction in the number of women (-4.3 million) over the last fifty years is significantly greater than that of men (-2.8 million), so much so that in 2070 men outnumber women. For Eurostat, on the other hand, although it is women who experience a greater decrease, the numbers are less unbalanced (- 3.5 million women and - 2.3 million men) and in 2070 there is still a gap of about 0.4 million units in favour of women (***Figure 1.5.b***).

[39] All the difference is due to the different migration balances because the natural balances are almost the same.

Figure 1.5.b - Population by gender (2018 projections)



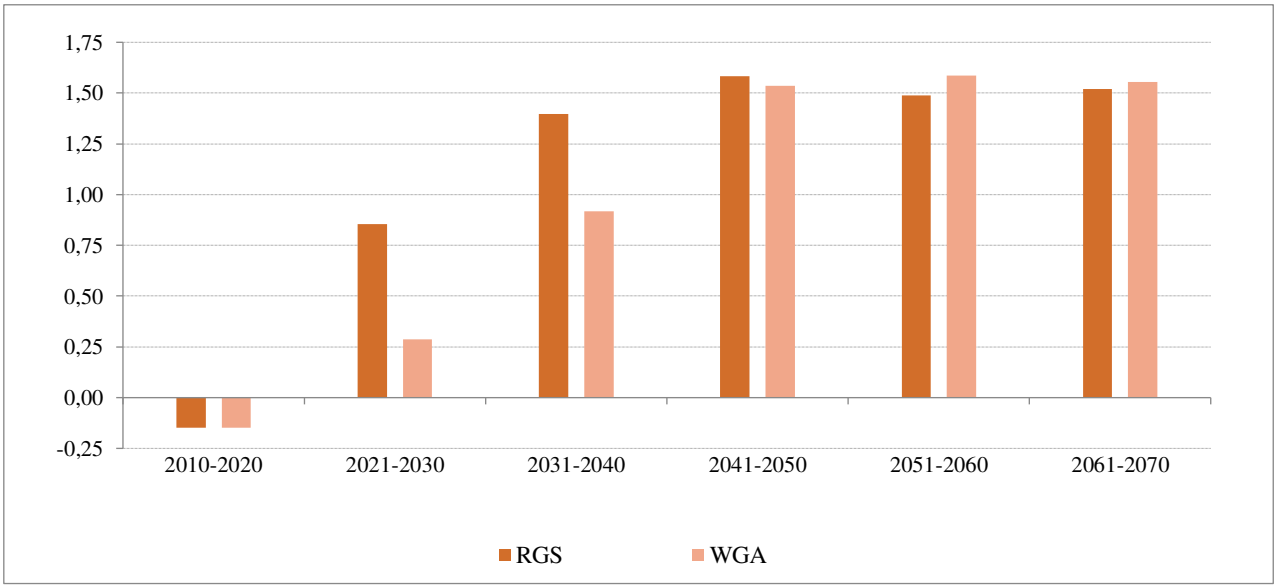
ISTAT men – ISTAT women – EUROSTAT men – EUROSTAT women

In the WGA projections, the deterioration of the population framework is accompanied by an even more substantial deterioration of the **macroeconomic framework** scenarios, in particular as regards productivity gains. On the basis of the methodology defined in the *Output Gap Working Group* (OGWG), the growth rate of Total Factor Productivity (PTF) in Italy averaged out at a slightly negative level[40] over the next decade. This result, together with the decision taken by EPC to extend the period of convergence of the TFP to the common 1% from 2035 to 2045, determines a strong decline in the average annual growth rate of productivity per employee which, until 2031-2040, appears well below the fluctuation rate used in the RGS projection, following similar trends only over the last two decades of the projection[41] (***Figure 1.6***).

[40] See: European Commission, *European Economic Forecast – Spring 2017*, Institutional Paper 053, 11 May 2017.

[41] See Fig. 1.5. The changes recorded in the middle and end of the forecast period arise endogenously from the application of a production function (Cobb-Douglas with constant scale yields) which, considering the capital deepening component, correlates the rates of change in productivity with employment trends. Otherwise, the structural growth rate of Total Factor Productivity (TFP) is assumed to be stable at 1% from 2045, i.e. with a ten-year extension of the convergence period of the TFP growth rate, previously set at 2035. For details on the production function, see: European Commission, *The 2018 Ageing Report. Underlying assumptions & projection methodologies,* op. cit., Annex 3 *Methodology underpinning potential GDP growth projections*, pagg. 92-93.

Figure 1.6 - Change in productivity rates (annual average values per period - GDP at 2010 prices per employed worker)



Lower productivity growth is accompanied by less performing **labour market** indicators. The employment rates of the working age population (15-64 years) in the two projections are different and the gap in this case too occurs over the period 2020-2040[42], namely around four percentage points between the RGS and the WGA projections, 65.9% in the former compared to 62.2% in the latter, which then remains almost unchanged until the end of the projection period[43] (***Figure 1.7***).

Figure 1.7 - Total employment rate (people aged 15-64)

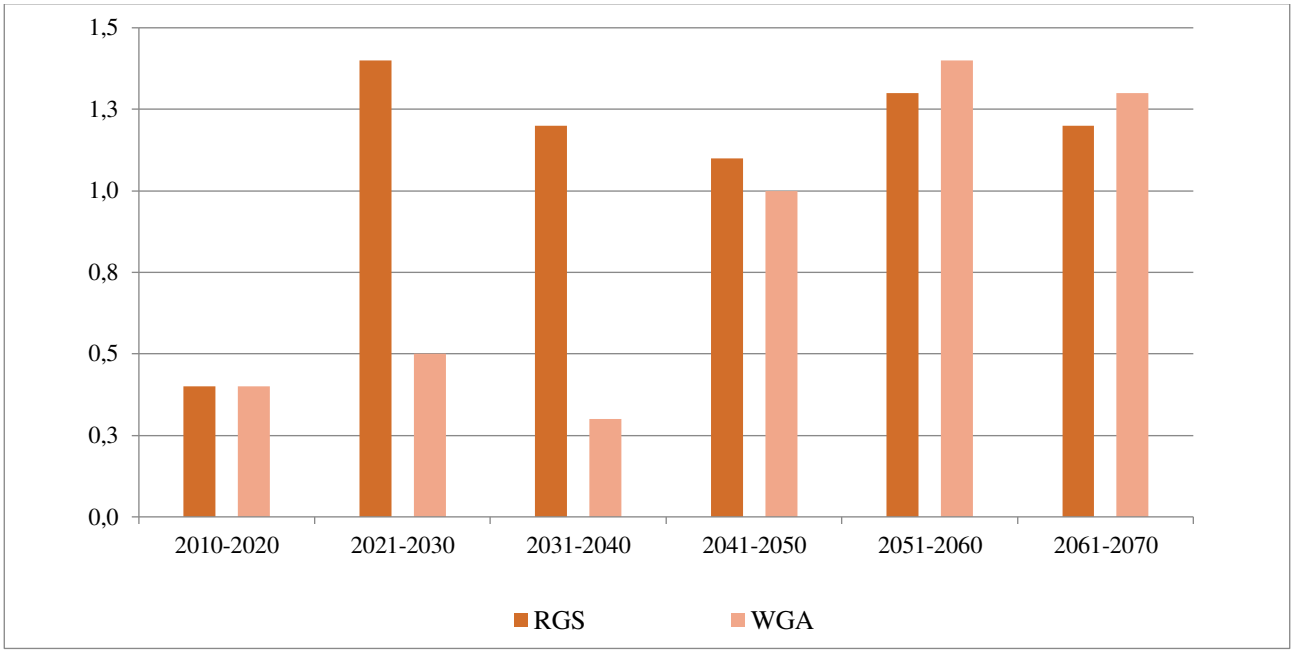
[42] When the nominal values are used, inflation assumptions are obviously relevant. This is not particularly stressed in the projection models as if it were implicitly assumed that the change in pension spending attributable to prices is in line with the inflation rate as estimated by the GDP deflator. When explicit, it is still assumed to be a 2% rate in the long run.

[43] The employment rate gap, taking into account the different shares of people in working age resulting from population projections in each of the two models, is equivalent to an average of about 32,000 more jobs per year in the RGS model compared to the WGA model for the period 2020-2070.

By breaking down the dynamics of employment rates by gender, it can be observed that this gap exists for both men and women. However, while for the latter there is a consistent difference but between increasing values (+7.3% for RGS against +4.2% for WGA from 2020 to 2070), as far as men are concerned, the outcome of the WGA projection is essentially unchanged in the employment rate (+0.9% from 2020 to 2070), against an increase that appears significant in the RGS scenario (+6.7% over the same period). Therefore, looking at the dynamics of productivity and employment together, a contradictory and even quite unique picture is revealed, which can be summarised as follows. Along the lines of the "*Kaldor-Verdoorn law*", the projections show a positive ratio between product growth and productivity growth in the long term, but on the basis of the parameters adopted, the elasticity of this ratio is such that the decades of higher average economic growth are those in which, with a decreasing population and a constant employment rate, at least for men, a decrease in employment actually occurs.

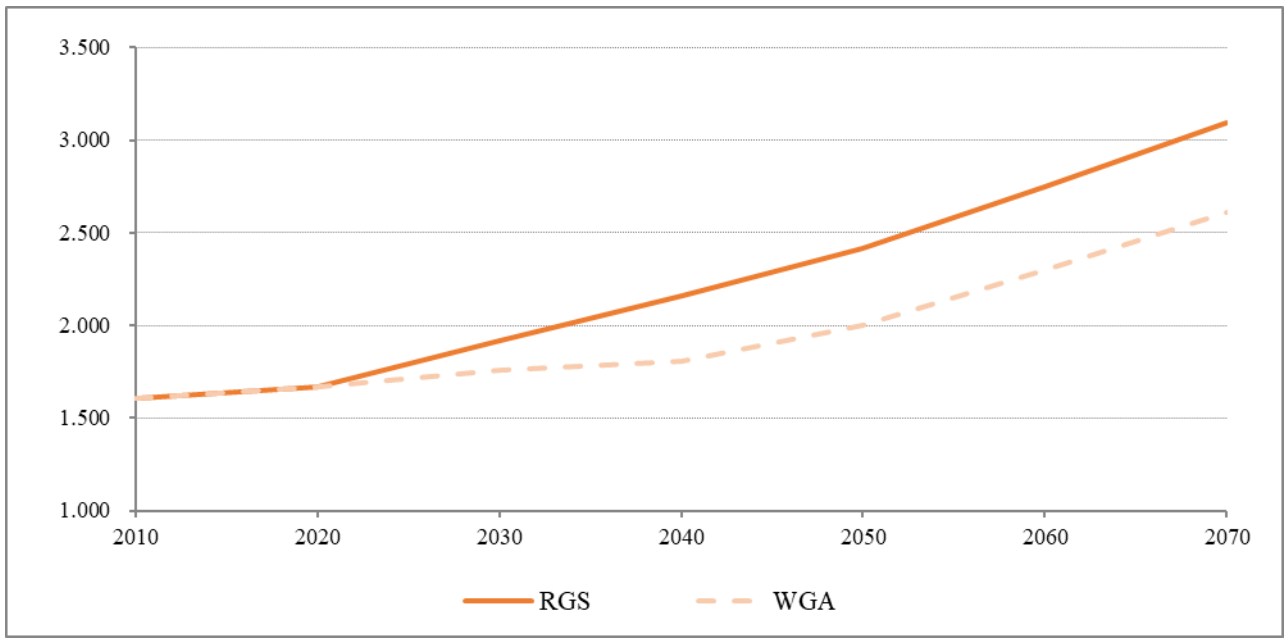
The assumptions in the WGA scenario, which, as mentioned above, have a strong impact on productivity dynamics but also have significant repercussions on employment rates, *lead to a substantial reduction in Italy's growth prospects*. Under the RGS scenario, the average annual rate of GDP change over the entire period has already been reduced, from around 1.4%, a value close to the EU average, which was endorsed in previous rounds of projections up to 2015, to an average value of 1.1%, equal to 1% up to 2040 and 1.2% in the following decades up to 2070 (**Figure 1.8**).

Figure 1.8 - change rates in % of real GDP (average values for the period)



In the WGA model, the average annual change rate drops in the updated scenarios to as much as 0.4% until 2040, i.e. about one third of the expected growth for the average of the EU countries, and rises to 1.2% in the subsequent period until 2070. The gap with the RGS scenario in the average GDP growth rates is therefore *particularly evident from 2020 to 2040*, as the values are in the ratio of one to three, while after 2040 and until the end of the projection, the growth forecast in the two models realigns again, with even a very slight headline in the WGA model.

Figure 1.9 - Real GDP (levels)



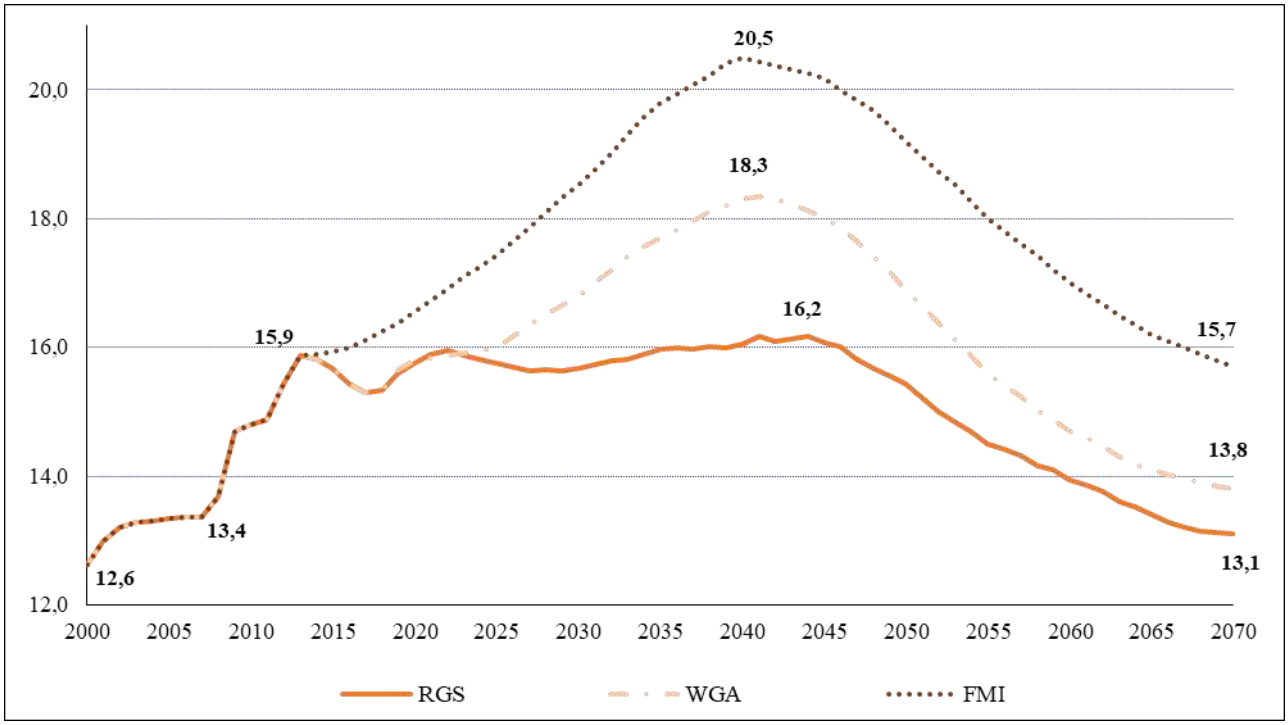
This particular pattern in the dynamics of productivity, employment rates and hence real GDP growth rates, is clearly visible in the timeframe of the real GDP level over the whole projection period (***Figure 1.9***). While in the RGS model, after years of flat growth following the crisis, the picture outlines a relatively constant progression, in the WGA projection GDP growth is still very low until 2040, and then accelerates in parallel with the path defined by RGS, i.e. with not dissimilar growth rates, while maintaining constant over time the gap created in the first twenty years of the projection.

From the point of view of the *financial sustainability of pension spending*, the new assumptions regarding the population framework and macroeconomic variables have the effect of raising the pension spending to GDP ratio in the projection models, both RGS and WGA, compared to the values derived from projections made in previous years[44]. The already planned increase from 2019 onwards appears to be higher also as a result of the provisions of Decree-Law No 4 of 2019 and in particular the introduction of the new mechanism for early retirement. As regards the RGS model, based on the underlying assumptions, growth is expected to be about half a percentage point until shortly after 2040, followed by a decline for the remaining projection period to a level close to the one measured before the last decade's crisis. In the WGA projection, the increase in the ratio after 2019 takes on much greater proportions, reaching around 2040 about two percentage points of deviation from the RGS projection, and reaching at the end of the forecast period a pension spending to GDP ratio that is 0.7 percentage points higher than the one forecast by the national base RGS scenario (***Figure 1.10***)[45].

[44] The ratio concerns the nominal values of the two variables. In this respect, it should be noted that, based on the long-term level agreed in the EPC-WGA, the inflation rate and the GDP deflator are set at 2% per annum from 2022 onwards. For previous years, the values of the 2018 DEF have been adopted for both variables. Wage and labour income developments coincide, on average, with productivity developments per person employed over the entire forecast period.

[45] It should be noted that pension spending forecasts are based on the assumption that, as already reported in the Technical and Illustrative Note (NTI) to the 2017 Budget Law, the financial advance as a pension guarantee (so-called market EPA) is qualified and classified in national accounting as a loan and not as a direct monetary transfer to households. In addition, as highlighted in the NTI to the Budget Law 2017 and in the DEF 2017, the forecast of pension spending does not include

Figure 1.10 - Public pension spending as a percentage of GDP



RGS – WGA - IMF

The effect of the drastic revision of the assumptions in the new WGA baseline scenario, therefore, seems to thwart most of the financial effects of the long reform process of the Italian pension system, resulting in a rather pronounced "hump" in the long-term profile of the report, a problem that has also been much discussed in the media since the mid-1990s and that seemed to have been resolved or at least substantially mitigated, following the numerous interventions by Italian governments to keep pension spending under control.

To clarify the weight that the different assumptions used in the projections may have on the timelines of the ratio, ***Figure 1.10*** also shows a projection, already mentioned above, made by the International Monetary Fund (IMF). This projection does not revise the method used for the European model but adopts a sort of sensitivity test, measuring the deviations from different scenarios for the most influential variables. In the more "pessimistic" version, the main changes concerned[46]: (i) a more pronounced worsening of the pension/employee ratio compared to the RGS and WGA scenarios, which increased differently as a result of different underlying assumptions about population trends; (ii) a higher value than the average pension; (iii) a lower total employment rate at the end of the period of about 7 percentage points over the RGS and of 3 percentage points over the WGA scenario; (iv) an average productivity over the whole period of about two thirds of the other two scenarios, mainly due to the assumption that the decline in productivity during the crisis years drags on for a long period of time[47].

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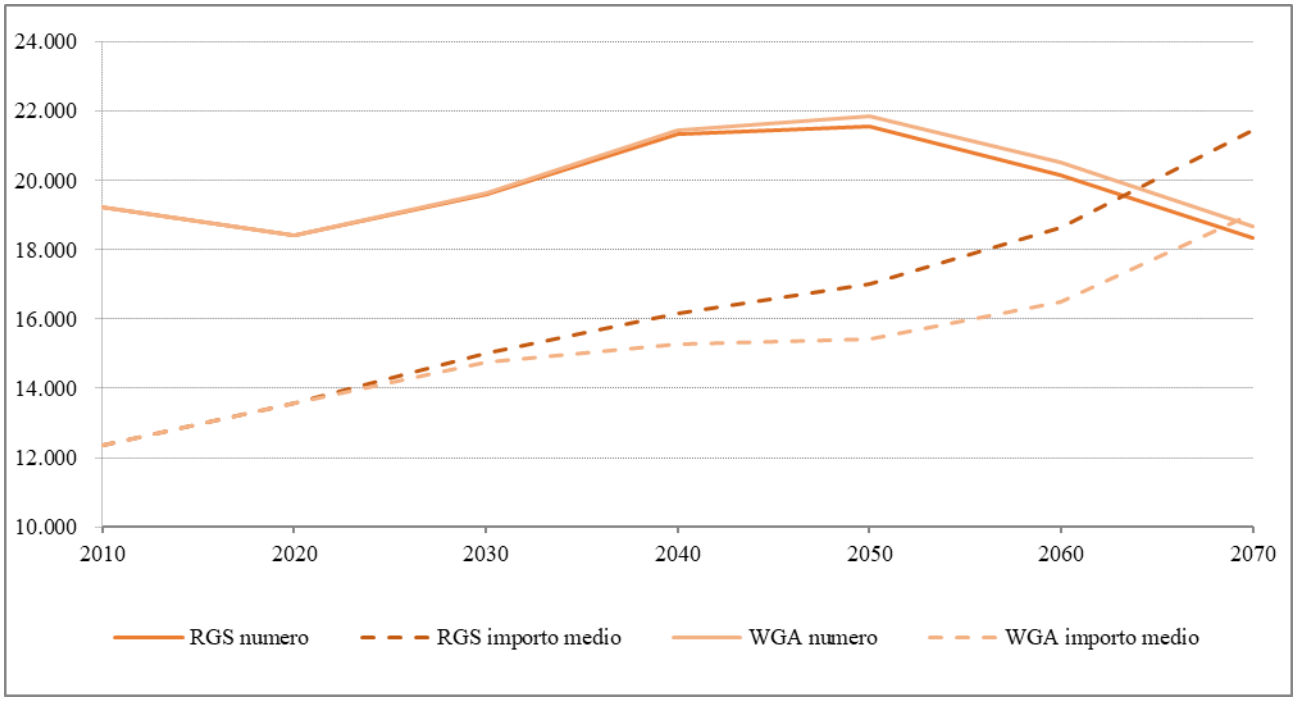
the costs relating to the so-called social EPA allowance, since it does not consist in a pension benefit but in a welfare allowance recorded within the total spending for social benefits in cash (D62) from public administrations.

[46] The assumptions of the IMF projection are contained in the cited Andrle M., Hebous S., Kangur A. and Raissi M. For a summary of this projection, see also Parliamentary Budgetary Office, *Le proiezioni di medio-lungo periodo della spesa pensionistica*, "Thematic Focus", no. 8, Rome, 28 June 2018.

[47] The dragging effect for some variables is also reflected in the methodology used by EPC-WGA; this methodology defined by the Output Gap Working Group (OGWG) makes a distinction between medium and long term trends. In the

As shown in the graph, the combined action of these assumptions does not alter their overall form, meaning a peak in the ratio around 2040 and a subsequent gradual decline until the end of the year. However, the different assumptions have a major impact on the chart, as the gap with the other curves is very wide (on average, two GDP points until 2014 and almost three GDP points in the following years).

Figure 1.11 - Pensions: number and average amount



RGS number – RGS average amount – WGA number – WGA average amount

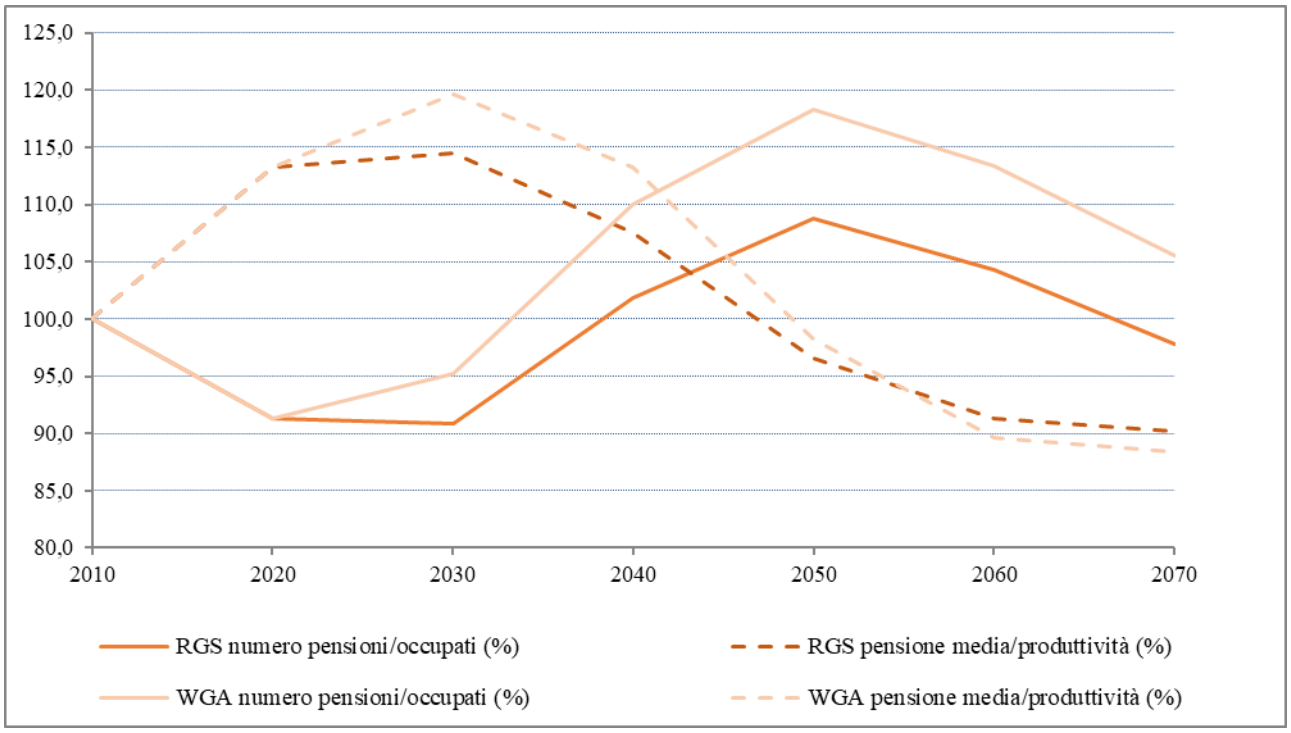
Going back to analysing in more detail the reasons for the different shares of GDP absorbed by pension spending in the RGS and WGA scenarios, *it seems clear that the main reason lies in the different estimates of economic growth*. In fact, in the two projections, the number of pensions paid is very similar throughout the period considered, while as far as the average amount of the benefits is concerned, the value calculated in the RGS model tends to increase more from 2025 than in the WGA forecast (***Figure 1.11***).

With these values, the volume of pension spending in the WGA projection is lower than that of the RGS by an average amount of about 5.5 billion euros per year, from 2020 until the end of the period considered. However, if the pension spending/gross domestic product ratio is broken down into two main components, i.e. the ratio of the number of pensions to the number of employed workers and the ratio of the average pension to the average productivity[48], it seems clear that lower economic growth, linked to lower productivity and employment profiles, tends to shift the value of the two ratios upwards in the WGA projection, i.e. to increase the share of pension spending on GDP (***Figure 1.12***).

medium term, the WGA model adopts a method called "T+10" on the basis of which the trend of some variables, such as unemployment and total productivity, is projected over a 10-year horizon, obtained by applying the Kalman statistical filter to the historical series.

[48] As pension spending (S) equals the output between average pension (p) and number of benefits paid (P) and GDP equals the output between average productivity (r) and number of workers employed (N), the pension spending to GDP ratio can be defined as follows: S/GDP = (p/r) * (P/N).

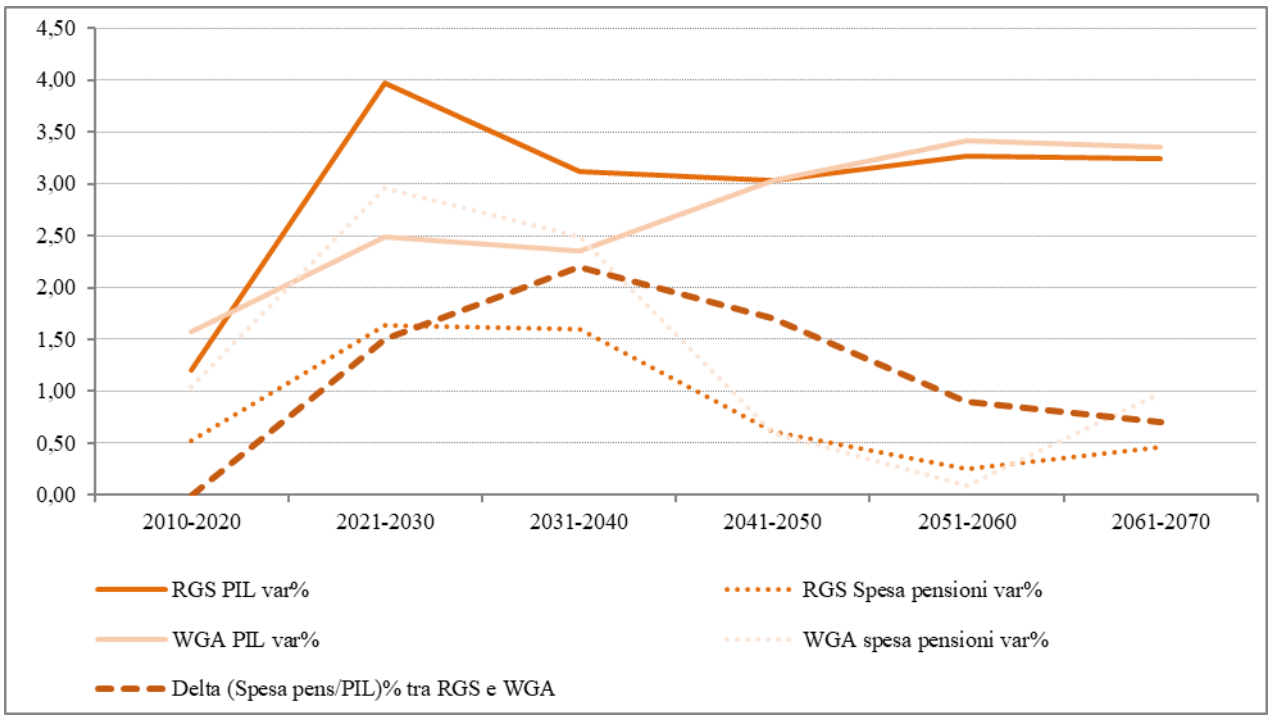
Figure 1.12 - Reports: No. of pensions/employed workers; average pension/average productivity (indices: 2010=100)



RGS number of pensions/employed workers (%) – WGA number of pensions/employed workers (%)
RGS average pension/productivity (%) – WGA average pension/productivity (%)

The different impact of the assumptions underlying the macroeconomic framework and the variables that determine pension spending on the trend of the ratio between pension spending itself and GDP is clearly shown by the analysis of the change rates of the two ratios, compared to the gap between WGA and RGS projections over the period considered (***Figure 1.13***). The most critical interval is between 2020 and 2040, when a gap of more than two percentage points is created between the trends in pension spending to GDP ratio in the two projections. Looking at the curves, we can see that over these years, the change rates of pension spending in the WGA model are always lower than the RGS projection. However, over the same period, the WGA model shows an average nominal GDP growth that is more than one percentage point lower than the expected RGS trend, with a negative effect on the impact of the above-mentioned pension spending.

Figure 1.13 - Change in nominal GDP and pension spending (annual averages)



RGS GDP % change
WGA GDP % change
% difference (Pension spending/GDP) between RGS and WGA
RGS % change in pension spending
WGA % change in pension spending

2. Consequences of long-term projections and possible alternative scenarios

As already explained in the previous paragraph, the population forecasts and the scenarios formulated on long-term economic trends based on data from ISTAT and other national and international organisations ***point to a very bleak future for our country***. The combined effect of the increase in life expectancy, the low birth rate and the reduction in net migratory flows means that a population with a current quota of people over 65 years already above the European average will experience further ageing in the future.

In the economic scenarios of the various projections, especially based on the WGA model and more importantly according to those formulated by the IMF, productivity trends, and therefore economic growth, are systematically below the European averages. The same considerations apply to employment rates, which are projected to rise but still tend to be lower than the European averages.

In a population where the number of people in working age is decreasing, employment rates below the average result in a decreasing number of employed workers which, not being compensated by productivity, translates into an almost stagnant gross domestic product.

The upward trend in the ratio between pensioners and employed workers due to population ageing, which is partly offset by the increase in retirement age, and the increase in the average amount of benefits, cause pension spending to rise. The impact on GDP, although expected to go back to values not far from those of the early years of the projections when the social security contribution method was introduced, shows a worrying trend which, especially in the WGA projections, or even worse in the IMF ones, outlines, over a long period of time, a significant increase in public social security spending over gross domestic product and the incomes of employed workers.

Therefore, such forecasts raise serious doubts about the future sustainability of pension spending and, consequently, about the possibilities of ensuring the adequacy of pensioners' incomes in the coming years. More generally, considering the impact of the tax burden that can fall on the incomes of employed workers, the actual implementation of the results of the projections would entail the risk of downsizing the entire welfare system of our country.

In order to address the measures that might be necessary to mitigate the effects of these projections on the future of our country's social protection system, it is necessary, however, to make some specific assessments on the reliability of the basic elements underlying long-term projections, namely: population parameters; the main labour market indicators (working age population, active population, employment); the variables of the macroeconomic context, especially with regard to productivity and the determinants of economic growth.

The following chapters are therefore focused on an assessment of projected model scenarios, which is necessary to verify the soundness of the forecasts and, from a prospective point of view, to assess what changes could result from specific regulatory measures

Before going into the specific issues, it may be useful, however, to summarize some current data (real and not predictive) that define our country.

a) ***Pension spending to GDP ratio***

- the ***Annual Report by Itinerari Previdenziali***, which uses the method of the former ***Nucleo di Valutazione della Spesa Previdenziale***, has estimated this ratio, net of the welfare component (GIAS), at **12.87%** for 2017, with a 10-year average around **12.6%**[49].
- ***INPS***, in its annual report for 2018, specifies that pension spending net of the welfare component (Gias) is equal to **12.01%** while gross of welfare is equal to **15.12** (see page 11 of the Report).
- ***The State General Accounting Department of the State*** in its annual report *Le tendenze di medio lungo periodo della spesa pensionistica*, health and LTC spending - No. 19 of July 2018" sets this ratio at **15.5%** but includes the whole GIAS component (about 2 points of GDP), pensions and social benefits that are pure welfare and the pensions of the Regional and Constitutional bodies[50].
- Finally, ***Istat*** calculates the ratio reported to Eurostat, at **16.1%**, (2016 data) which also considers all welfare benefits, those provided by private systems, civil invalidity, mobility allowances, compensatory allowances by INAIL and other benefits; however, it is ISTAT itself to clarify that these are not pensions[51].

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[49] **A.1.6 - Nucleo di Valutazione della Spesa Pensionistica: Benefits included in the aggregate**.

The NVSP report analyses the structural and financial elements of the statutory IVS pension system. The definition of pension spending includes: provisional pensions paid to military personnel directly by State Administrations, but does not include pensions paid by Constitutional Bodies and Regional Governments (in particular Sicily Regional Government) to their former employees. 280 The latter amounted to approximately 1.8 billion euro in 2015, equal to approximately 0.1 percentage points of GDP. 281 The survivors and disability benefits also include pension contributions paid by private institutions. It also includes the capital benefits provided by some special funds at INPS, ENPAM and Enasarco.

Values recorded. Spending data are equal to the sum of the instalments actually paid, net of family allowances, recovery of benefits and income from the non-accumulation rule. Pension spending is indicated both gross of the portion charged to the State budget (GIAS and the State's contribution to the Management of State Employees at the former INPDAP) and net of this amount.

[50] **A.1.7 - Department of** Pension Spending/GDP Ratio elaborated by the State General Accounting Department, adopt a definition of pension spending that includes IVS pensions - net of capital benefits - provided by public institutions (including, therefore, spending on temporary pensions provided to military personnel directly by State Administrations and Constitutional Bodies and Regional Governments - in particular, for example, Sicily Regional Government - to its former employees) and social pensions (social allowance since '95). The addition of the latter component is justified since it is an institution directly linked to population ageing. The same aggregate is adopted in the forecasts of the PA accounts published annually in the official documents of public finance, where the breakdown of the "social benefits in cash" into "pension spending" and "spending on other social benefits in cash" is indicated.

Values recorded. The spending aggregate expresses the sum of the actually paid instalments, net of the recovery of benefits, family allowances and income from the non-accumulation rule.

[51] **A.1.1 - Istat Statistica: Benefits included in the aggregate.**

The benefits included in the aggregate are: IVS pensions: invalidity, old-age and survivors' benefits paid as a result of the work carried out by the protected person upon reaching certain age limits, age of contribution (direct invalidity, old-age and old-age pensions). In the event of death of a person in employment or already retired, these benefits may be paid to survivors (indirect pensions); compensation pensions: pensions for accidents at work and occupational diseases and war pensions including gold medal allowances. The characteristic of these pensions is to compensate the person for an impairment, according to the level of the same, or for death (in which case the benefit is paid to his survivors) as a result of an event that occurred in the course of employment. The entitlement and amount of the benefit is not related to the years of contribution, but depends on the damage suffered and the salary received; welfare pensions: benefits consisting of war pensions, civil blind, civil deaf and disabled people and pensions or social allowances to citizens aged 65 and over, without income or with insufficient income. The main characteristic of these pensions is that they guarantee a minimum income to persons who are unable to obtain it because of congenital or unexpected disabilities or simply because of old age. In any case, these are pensions that are not linked to any contribution system. The aggregate also includes the attendance allowances (which are not pensions) paid as support for the inability to perform daily tasks proper to age;

It was precisely the figure provided by Istat (partly caused by the policy choices that in the last 20 years have burdened all welfare and income support measures within the pensions framework) that triggered the 2011 Monti-Fornero reform, since at the time Italian pension spending according to Istat was above 16.5%, while the European average was below 13%; It was therefore obvious that the Commission asked for a reduction of at least 2.5 percentage points of the ratio as the main measure, which was achieved mainly by leveraging on workers who already pay high social security contributions to the pension system for social security purposes; on the other hand, the ***so-called "assisted" beneficiaries who have not paid all or part of their contributions***, have seen their benefits increase, with a relative increase in the imbalance funded by general taxation.

b) ***Welfare***

As a result, the Italian problem, after several system reforms from 1992 to 2012, does not concern welfare pensions, where the ratio between contributions paid by production (workers and employers) and benefits is in balance (even in surplus if one considers pension spending after tax, given that the contributions of the employer and the worker to social security are not subject to taxation). *Italy is one of the few countries to have both an automatic link between the increase in life expectancy and retirement age and transformation coefficients that are inevitably decreased to the increase in life expectancy itself*. Thanks to these two powerful ***stabilisers***, pension spending can grow but only marginally. The real problem is the ***welfare spending*** that has structurally increased in the last 11 years by as much as ***43 billion*** a year, with a negative impact on public debt (see ***table 2.1***). As we shall see in the final chapter, the consequence is that if even in our country, as provided for in the 2015 Jobs Act, a welfare database was to be built, annual savings of over 5% could be recorded.

merit pensions: lifetime allowances and former combatants' allowances awarded by the order of Vittorio Veneto and Medal and Cross allowances for military valour. These are, in any case, pensions not linked to any contribution system; pensions provided by private institutions; benefits provided in capital are not included, since they are benefits that do not fall within the definition of "pension". Values recorded. The values recorded are: the number of pensions outstanding at 31 December each year; spending value expressed as the sum of the pension amounts recorded in December of the year multiplied by the number of months for which the benefit is paid (so-called "spending at the end of the year"). The monthly amount at 31 December includes: the basic amount, the increase linked to the change in the cost of life index and the trend in wages and salaries, the share for family dependents and any other allowances and arrears.

Table 2.1 - Increase in welfare spending and public debt

Years	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2013/2018	2008/2018
Social spending under general taxation - 5.3% annual increase	**73.000**	**78.000**	**82.000**	**85.000**	**89.000**	**92.700**	**98.440**	**103.673,60**	**107.374**	**110.150**	**116.000**		**incremento 5,3% annuo**	**43.000**
Increase in social spending since 2008		**5,00**	**9,00**	**12,00**	**16,00**	**19,70**	**25,44**	**30,67**	**34,37**	**37,15**	**43,00**		**190,33**	**232,33**
Annual deficit*	**-42.575**	**-81.741**	**-71.457**	**-60.016**	**-47.240**	**-47.400**	**-49.000**	**-44.200**	**-41.600**	**-39.700**	**-28.154**	**-14.119**	**-221.900**	**-524.929**
Interest on debt		70.408	70.152	78.021	84.086	**77.568**	**74.377**	**68.018**	**66.640**	**65.641**	**62.536**	**63.004**		
Savings in interest on debt from the 2012 peak						6.518	9.709	16.068	17.446	18.445	21.550	21.082	**89.736**	
Deferral of the balanced budget date DEF or NADEF**				DEF from 2001 to 2013			DEF from 2013 to 2016 NADEF to 2017	NADEF from 2017 to 2018	DEF from 2018 to 2019	DEF from 2019 to 2020 with deficit = 0.25%	NADEF 2018 deficit (2.4%) 2.04	deficit 2.04	**10 years**	
Government	**Berlusconi**-Tremonti from 8 May 2008 to 16 November 2011			**Monti**-Grilli from 16 November 2011 to 27 April 2013		**Letta** 28 April 2013 to 21 February 2014	**Renzi**-Padoan from 22 February 2014 to 12 December 2016			**Gentiloni**-Padoan until 1 June 2018	**Conte**-Tria from 1 June 2018			
GDP	**1.632.151**	**1.572.878**	**1.604.515**	**1.637.463**	**1.613.265**	**1.604.599**	**1.621.827**	**1.652.085**	**1.689.824**	**1.724.205**	**1.753.949**	**1.751.000**		
Deficit/GDP (in orange Gentiloni Government)		-5,20	-4,45	-3,67	-2,93	-2,95	-3,02	-2,68	-2,46	-2,30	-1,61	-0,81		
Public debt	1.671.001	1.769.254	1.851.252	1.907.392	1.989.629	2.069.800	2.137.316	2.173.347	2.219.506	2.263.510	2.316.700			
Public debt/GDP ratio debito pubblico/Pil	**102,380**	**112,485**	**115,378**	**116,485**	**123,329**	**128,992**	**131,784**	**131,552**	**131,345**	**131,279**	**132,085**			

* DEF 2017 and 2018 data: The average deficit from 2008 to 2017 is 50.08 billion per year; figures in blue are interpretations; figures in purple are estimates; Public deficit/GDP 2004 = 99.74% and 2007 = 99.73%.

** Source: Servizio Bilancio e Studi,Senate of the Italian Republic

3. Population Framework

With the new forecasts, Istat estimates future population trends through a semistochastic approach that measures uncertainty for each of the components of population structure and dynamics.

The more we move towards the future, the more we enter unknown territory and consequently uncertainty grows. Around the median scenario, in fact, what Istat indicates as the "confidence interval" is extended, constructed in such a way that "the estimated value falls between the two extremes with a 90% likelihood"[52]. In 2065 the median value was 54.1 million, the lowest end was 46.4 million and the highest was 62 million. In a context of growing uncertainty, therefore, the Italian population will almost certainly tend to decrease.

Uncertainty is dominant over the estimate of fertility. Assuming that the average number of children per woman by 2045 (a not so distant horizon) could fall to 1.26 or rise to 1.8 means not giving any real indication. In other words, we do not really know what will happen to Italian fertility: it could decrease dramatically or it could rise towards the values of the most prolific European countries.

In addition, there is a great deal of uncertainty about migration flows from abroad. The lowest limit of the interval is close to zero and the highest at 5 per thousand. There may therefore be almost no net contribution from immigration or it may instead be very significant.

As pointed out in the same ISTAT report[53]: "It is worth remembering that the migratory flows with foreign countries are characterised, much more than other population factors, by profound uncertainty about the future. International migration is, in fact, governed on the one hand by regulations that can be amended, and on the other by socio-economic factors inside and outside the country that are not easy to interpret".

In an ageing population, deaths are increasing, this is easy to predict, but the difference is made by arrivals and here, as we shall see, there is greater uncertainty. In essence, these forecasts leave a large question mark on what supports "inbound" population growth. In the gap between 2011 and 2016 forecasts (later updated to 2017), Italian population trends - due to a long, overbearing, and poorly managed crisis, affecting an already weak structure - have drastically spiralled downwards. In particular, the birth rate has fallen to unexpected levels. The 2011 forecasts predicted a birth rate that was never expected to fall below 500,000 in the main scenario.

In the next few decades we will certainly be facing very negative population trends, with the natural balance becoming increasingly weaker and the age structure strongly unbalanced towards the elderly population, especially in the South.

The room for improvement comes from the uncertainty about births and migration, which leaves a wide window of opportunity for reinforcement. But even if the most pessimistic path were to be followed on these two fronts, Italy would have no hope not only of avoiding population decline, but also of making it minimally sustainable[54].

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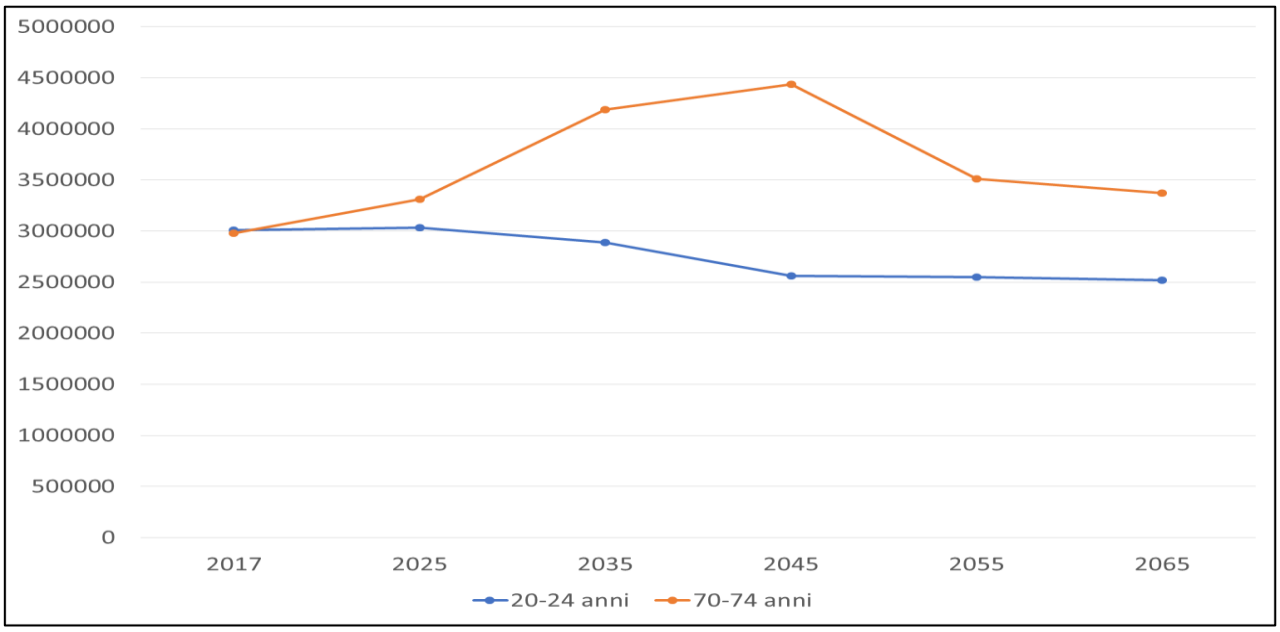
[52] Istat, *Il futuro demografico del paese*, "Statistiche report", Rome, 3 May 2018, p. 2.
[53] Istat, *Il futuro demografico del paese*, "Statistiche report", Rome, 3 May 2018, p. 6.

[54] One might well ask: does population decline automatically mean economic decline? Yes, in absolute terms, but not necessarily in per capita terms. The Japanese GDP is stagnating, but the GDP per capita is growing. For pension sustainability, it is necessary to decide whether one or the other counts. This applies to everything else on an equal footing. If productivity per employee increases, then GDP can also increase. It should be considered, as we will say later, that Italy has a large reservoir of inactive people and its employment rates are much lower than the European average;

3.1 The scenario up to 2045

If we consider the horizon at 2065, the situation resulting from the median scenario is an average number of children per woman going up from 1.34 to 1.59, a life expectancy reaching 86.1 years for men and 90.2 for women, and migration from abroad falling from 3 to 2.6 per thousand.

Figure 3.1 - Population changes in the 20-24 and 70-74 age groups



20-24 years – 70-74 years

In essence, the new approach of the Istat projections makes it possible to distinguish between the constraints on growth imposed by past trends (which no one can change anymore) and what is left open about our population future.

By 2045 the Italian population is indicated at 59 million in the median scenario, while it is currently 60.5 million. This 1.5 million reduction, however, is the result of very different variations in the different age groups. Loss will be equal to about 2.8 million among the under 35, and about 5 million in the 35-64 age group (the main working ages, which will become fully active in the future so as not to transform the ageing process into an unquestionable decline). On the other hand, in the 65 and above age groups, there will be an increase of just under 6.3 million. This median scenario at 2045 is the result of the following assumptions:

- increase in male life expectancy from the current 80.6 to 84.2
- increase in female life expectancy from 85 to 88.5.
- Increase in fertility (TFT) from 1.34 to 1.53.
- Immigration ("registered") from abroad equal to 288 thousand (compared to 337 thousand in 2017)
- Migration ("cancelled") to other countries equal to 129 thousand (compared to 153 thousand in 2017).

combined with an increase in productivity (encouraged by physiological unemployment rates - see RGS -) and an increase in exports (which can compensate for the decrease in domestic demand), the economy can improve even in the presence of a substantial population ageing process.

Uncertainty about projected scenarios

An assessment of the degree of uncertainty in this scenario can be derived from the upper and lower limits of the 90 percent confidence interval (proposed by Istat itself in the summary of results). The population projections are to be considered as the framework on which to build our future.

The data on the uncertainty around the median scenario allow us to identify the area of the framework that we can consider to be solid (i.e. the areas that are likely to consolidate over the next few decades) compared to those that are still unstable (i.e. the areas that can still change, either negatively or positively, depending on the choices that we can still make). In other words, *it is possible to evaluate the room for improvement compared to the median scenario if economic growth and effective welfare policies go back to a positive virtuous circle of population trends* (in particular: youth employment, family independence and building, work/life balance, active ageing).

Well, a substantial part of the forecasted scenarios shows an increase in life expectancy which, in the worst case, would increase by about 2 years by 2045.

Migration flows are, as we have already said, much more difficult to predict than the natural trends of the population. In any case, a positive balance from abroad can be given practically for certain until 2045. But, unlike life expectancy (with respect to which the increase does not seem to have any room for debate in the ISTAT forecasts), international immigration can be reduced to 161 thousand in the lowest limit of the range of uncertainty (90% range) or increase to 420 thousand (against 209 thousand exits).

In other words, *a scenario with a more consistent contribution of immigrants (who typically reach the point of strengthening the working age population and contribute positively to the birth rate) is one of the possible scenarios for our country in the coming decades*.

But if this leverage is possible (and if it is well managed, it could produce favourable results for the future of the country), there does not seem to be a willingness to set it in motion in the present. With respect to immigration from abroad, the current approach is defensive, not intended as a process to be governed positively (even in its complexity). On the other hand, wide margins are also possible with regard to fertility, which, however, reinforces the working age curve in a not short term horizon. In any case, as we have already said, the average number of children per woman would rise from 1.34 to 1.53 by 2045, according to the median scenario. But this value is weighed down by a very high level of uncertainty, so much so that the lowest limit envisages a fall to 1.26 and the highest one a convergence with the countries featuring the highest fertility in Europe (1.8).

Therefore, even with respect to fertility, Istat projections leave very ample margins, i.e. everything may happen (from ultimate sinking to complete recovery).

3.2 Uncertainty over the age distribution of the population

What are the implications of uncertain assumptions? [55] Or rather, are there any positive areas of action to which we can entrust the development of a less gloomy economic and population trend compared with that of the median scenario?

[55] It should be pointed out that the uncertainty on the distribution of the population does not only derive from the different assumptions but also suffers from uncertainty about the same.

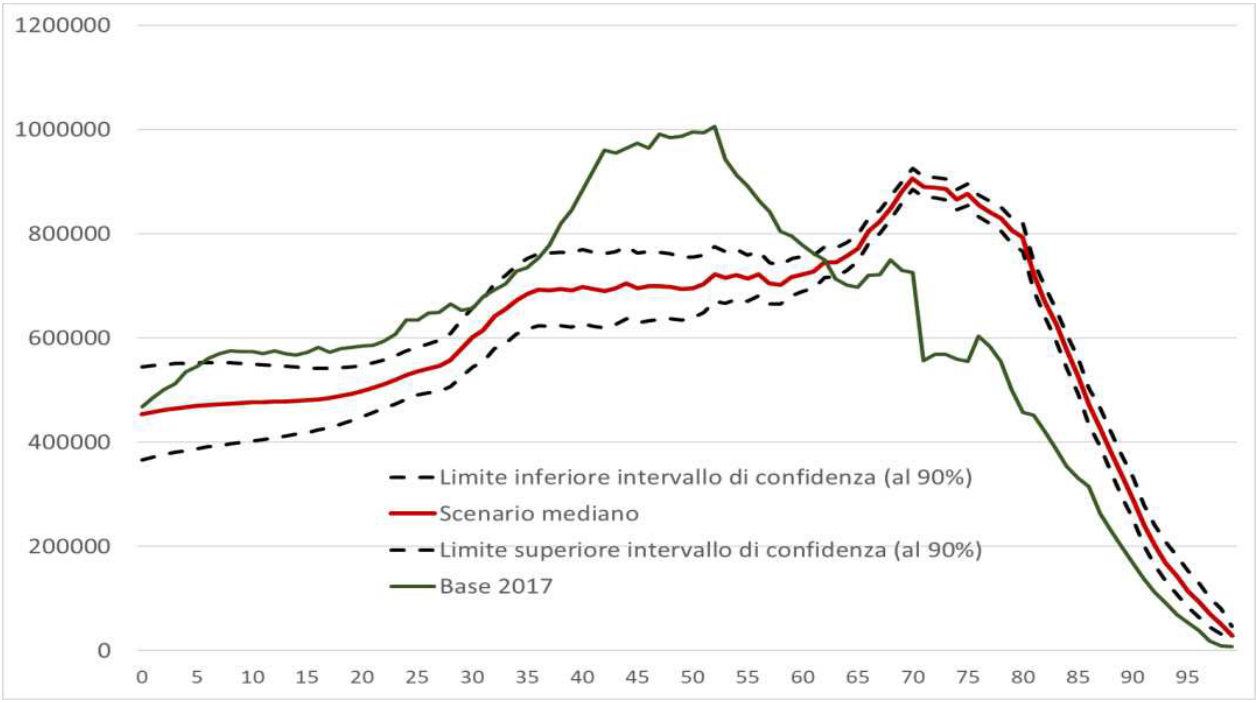
It is interesting then to note that if we consider the lower population threshold, the total amount will fall to just over 55.3 million inhabitants, but will rise to 62.8 million (i.e. significantly above the current level) at the upper limit. But also, this difference in population size with respect to the median scenario between the high and low estimates, results in a different impact of uncertainty on the different age groups.

People over 65

The lowest uncertainty concerns, as you can easily imagine, the older population (already living and therefore less affected by the fertility and immigration scenarios). The eighty year olds we shall have in 20 years' time are essentially the current sixty year olds (and survival assumptions, as we have seen, are those considered the most solid). This also means that one of the most well-established elements of our future is, in fact, the increase in the population over 65. But on this point the qualitative aspect also plays a role, that is, the threshold of transition into old age[56]. As compared to the current 13.5 million, it will rise to 19.8 million according to the median scenario. The low limit is 18.7 million. This means that we will in any case have more than five million more people over 65 than today by 2045. The increase in the number of over 65s is therefore characterised by a strong growth with moderate uncertainty. In other words, *the powerful growth of the elderly population is not an avoidable phenomenon and there is little room to act on its size. It is, in fact, the mechanical result of the shifting of the generation of boomers into old age. More than on the number, here we must act on health and on working conditions.*

[56] Longevity allows us to reach the new generations at the same age as the older ones and with better health conditions. In the positive scenario, the increase in the human capital of new cohorts and the enabling impact of new technologies can allow (in the presence of adequate policies to promote active ageing in terms of individual behaviour and to encourage age management in organisations) to further increase the potential and opportunities of the over 65s, at least in the 65-79 range.

Figure 3.2 - Median population scenario by age as of 2045 and lower and upper limits (IDC 90%) Comparison with the 2017 Baseline



Lower confidence interval limit (at 90%)
Median Scenario
Upper confidence interval limit (at 90%)
2017 baseline

People under 35

Much greater is the uncertainty about the younger generations. As already mentioned, according to the median scenario we are expected to see a massive drop in the number of people under 35 between now and 2045 (2.8 million). However, if we refer to the high limit of the uncertainty range, this loss is only about half a million. *If, therefore, we succeed in undertaking a coherent and solid virtuous path of development in combination with adequate family policies, we may achieve a possible future where the erosion of the new generations is practically zero*. In numerical terms, the number of people affected would fall from the current 20.8 million to 20.3 million. But this implies above all an improvement in conditions in southern Italy, where fertility is most in decline.

People 35 to 64 years of age

Even in the middle and mature working classes uncertainty is high, but it is not such, as in the case of the youngest, that we can hope, even in the best-case scenario, to be able to cancel that reduction. However, there is a considerable difference between losing 5 million potential workforce (median scenario) and 3.4 million (upper limit). However, it should also be considered that *in the case of a virtuous path of growth, not only would the negative population impact be more limited, but the participation in the labour market would also be higher*, especially for young people and women (as well as the greater role of foreigners).

This means that *the actual reduction in employment compared to the inactive elderly, between the current situation and the situation by 2045, could be significantly limited.*

Old-age dependency ratio

The old-age dependency ratio (population 65 and above on population 15-64) is currently around 35% and is set to rise to around 61% with little uncertainty (in the best-case).

The most important thing, however, is the combination of population change and the economic situation. Currently, just over 23 million people are employed. The population aged 15-64 is about 38.8 million. Correspondingly, the employment rate is around 59%.

In 2045, the basic national scenario of the State General Accounting Department[57] forecasts a 66% employment rate. This brings the employment rate for the median scenario to approximately 21.2 million people. However, it rises to just over 23 million if we refer to the population in the upper limit of the uncertainty range according to the ISTAT forecasts. In this case, therefore, there would not be a reduction in the total number of employees in 2045 compared to today. It should be noted that within this last scenario, which is more positive, the increase in youth employment cannot be considered as an automatic result of the fact that the Millennials (now under 35) are relatively few and that, therefore, with the exit of the boomers, a demographically large generation, they will have greater opportunities for inclusion in the labour market. *Only with solid development plans, advanced skills training (including digital and transversal skills), effective active labour policies, can the contribution of the new generations to the 4.0 economy be full. The same applies to female employment, which, in order to align with the European average, needs appropriate policies of work-life balance, the same policies that favour an increase in the birth rate.*

To calculate the total economic old-age dependency ratio it is necessary to compare inactive people over 65 with those in employment. Currently, this indicator is just above 0.58. To be more precise, we can calculate the 2045 indicator by removing from the inactive people a quarter of the population aged 65-74 (i.e., one out of four is expected to be active in 2045 in this class). This leads to an indicator value of 0.83[58] in the median scenario. In the upper limit of the range (consistent only with a favourable economic evolution that expands employment opportunities and reproductive choices), if we assume an employment rate of 0.7 (instead of 0.66) and 1/3 of employed (instead of 0.25) at age 65-74, the economic dependency rate of the elderly drops to 0.73. An employment rate of 0.7 is within the scope of a favourable development path for the Italian population. In any case, it means assuming that, by implementing a solid growth path, in more than 25 years' time, the employment rate in Germany will still remain below its current level (around 0.75).

It should be reiterated that the upper limit examined here is not the most likely scenario, but one of the possible futures, achievable only by putting in place effective and far-sighted policies: able to positively relate (with mutual support) population development, economic development and welfare. Moreover, these data show that the better we live in 2045, the more we succeed in transforming life quantity into additional quality. In particular, the age group between 65 and 75 will be considered less and less "old". The great majority of the population will be in this stage of their lives, in good health, with great energy, many interests and being economically and socially active. This advance generated by longevity can be further supported and favoured by new technologies, i.e. there will be many more "smart seniors" in 2045. But this positive potential must also be exploited through

[57] MEF - RGS, *Le tendenze di medio e lungo periodo del sistema pensionistico e socio-sanitario*, Report no.18, cit.
[58] Close to the projected 2018 value by EPC – AWG.

appropriate policies that allow those who are young adults today to prepare in time for a mature phase of success.

The very large generation of Boomers will retire and the demographically thinner generation of Millennials will be the centre of working life. The data presented here clearly confirm that the prospects for economic growth and social well-being in the coming decades depend closely on today's ability to put in place a solid plan to fully exploit the human capital of the Millennials (men and women) in the production processes of the country and to promote the active aging of the Boomers.

4. Population in working age, labour force and employment

In the previous chapters we have shown that there will be fewer people in general and fewer people in working age in the future; since employment plays a fundamental role in the development of the country and in its potential for balanced growth, it becomes essential to be able to mobilize all the available workforce by implementing policies that tend to increase employment rates, especially of women, generally encouraging all forms of regular employment, facilitating access to employment and making the most of the productive opportunities that new technologies offer. This requires a more direct link between education, lifelong learning and labour market needs, with special attention to the integration of young people and immigrants.

In order to understand the scale of the future labour force, it is necessary to forecast access to and exit from the labour market, obviously starting from the population trends foreseen up to 2035, broken down by age group (*the data in the table below refer to January of each future year and are expressed in thousands of units*).

Table 4.1 - Size of working age cohorts and pensioners - 2018-2035

	2018	2020	2025	2030	2035
15-24 years	5.884	5.318	5.978	5.839	5.470
25-64 years	32.874	32.833	32.264	31.177	30.092
> 64 years	13.652	13.938	15.704	17.210	17.818

4.1 The effects of replacement mechanisms between cohorts

On this basis, an attempt can be made to estimate the effects that the replacement mechanism triggered by population trends could have on the labour market in terms of absolute numbers. On average, 900,000 people were born between 1957 and 1977; 600,000 between 1978 and 1994; 500,000 between 1995 and 2010; 480,000 between 2011 and 2018. We also assume that: **i**) those born in 1957 will retire at an average age of 63 years as of 2020[59]; **ii**) those born in 1967 at 63 years as of 2030 and those born in 1977 at an average age of 66 years as of 2041[60]. The approximately 700,000 (calculated with a somewhat generous margin (taking into account that in the period in which the 878,000 born in 1957 could theoretically be part of the labour force, the employment rate has fluctuated between 54% and just over 58%) who will retire in 2020, will be replaced by those born in 1996 who will enter the labour market at an average age of 24 years. Theoretically, these are 528,000, but obviously not all of them will be labour force.

If we assume that by 2035 the actual retirement age would be over 67 years, we would have 2,832,000 more potential workers in the active age group. If the age of entry to work were 20, we would have 2,890,000 more young people at work. Therefore, in order to keep the labour force constant, the retirement age should be kept at 67 and the entry of young people into the labour market should be

[59] Reference is made to the real average retirement age recorded at 62 years and 4 months in 2018 (OECD source and Report no. 6 Itinerari Previdenziali). In this case, we can assume a convergence over 63 years, which will, however, increase to 64 years over the next three years.

[60] Assuming that no further measures are taken on the retirement age.

brought forward. At a standstill, the ratio of labour to pensioners in 2035 would be 1.68, while with corrective measures it would increase to 2.20.

If, with another simulation, we suppose to raise the employment rate for the age group 15 to 64 compared to that of January 2019, which was 65.6%, equal to 25,912,000 units, thereby managing to increase it to 75% in 2035, we would have 26,762,000 active workers, that is, an increase by 850,000 units.

With similar simulations, it is possible to make estimates on the employment rate, which was 58.6% in January 2019, equal to 23,205,000 employed people in the age group 15-64. If it were possible to increase the employment rate by 10 points as assumed above, we would have an increase of 6 points in the employment rate; in this case by 2035 there could be 24,597,000 employed people in the age group 15-64, and a ratio with pensioners of 1.53 (assuming that the latter are 16,100,000). If, on the other hand, the employment rate does not rise, then the ratio would be 1.44 compared with the current value of 1.45.

If, as a last simulation scenario, we added to the 2035 labour force all the young people over 24 and the elderly under 67 years of age with a 64% employment rate, we would have 22,921,719 employed people and 14,927,800 people over 67, with an effective ratio of 1.53 to pensioners. From 2019 until 2041 (twenty-three years) we will therefore have a spontaneous trend with an average exit of 700,000 workers who could be replaced by less than 500,000 per year.

Assuming that we want to maintain the exit levels and acknowledging that the participation of the generations born after 2000 in the labour market increases significantly, the replacement balance would be equal to (200,000 x 23 years = 4.6 million) which could be absorbed in part by the approximately 2,707,000 unemployed people (ISTAT January 2019) and even more by at least a part of the approximately 9 million inactive people, as well as by the regularization of that share of foreigners who are still not working (currently an unspecified percentage of the approximately 4 million who are in Italy). If this were the case, the consequence would be that the unemployment rate would fall in the period 2041/48 to about 5% (an almost physiological fact) while the employment rate (employed over the total population in working age) could rise to 65-66%, or even more.

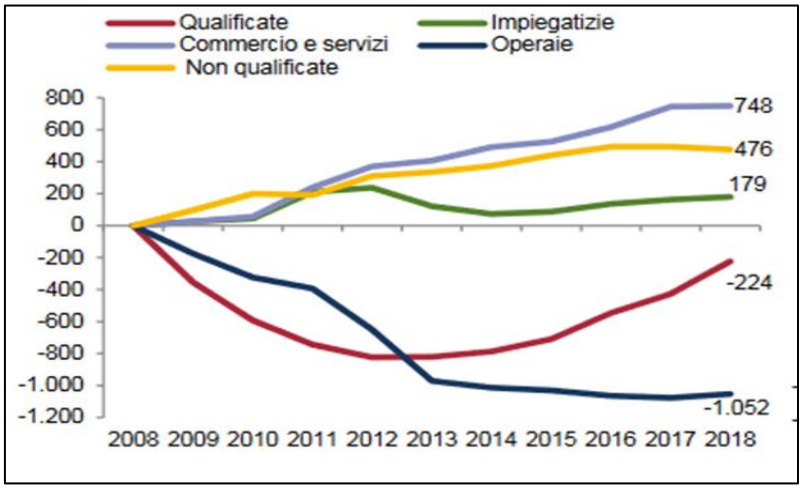
4.2 Replacements between cohorts and limits linked to professional profiles

The simulations carried out, which are obviously based on theoretical statistical data developments, have to deal with the reality of the labour market. As we know, the replacement of the labour force is no longer accompanied by an undifferentiated and almost automatic demand for labour, as it was in the Taylorist model, but by the characteristics (professional profiles required by the market) that must be brought together to contain mismatch phenomena as far as possible. As far as the growing sectors are concerned, for example, the demand for professionals with a high level of IT skills is on the rise, but for the time being it concerns only 5% of the companies (but 30% of those with more than 250 employees).

The numbers may be growing rapidly, but there is a mismatch problem that is becoming more and more important. The demands for average professionalism in the manufacturing industry are holding up well, but they are beginning to call for minimum requirements for digital skills which, in the future, could also cause problems in reconciling supply and demand. The demand for unskilled workers is growing, driven by fixed-term contracts and part-time contracts, partly in manufacturing not oriented

towards digitalisation but above all in services (retail, hotel and catering, personal assistance, logistics). (see ***Figure 4.2***)

Figure 4.2 - Full time and part time employed workers (unintentional and not); Data in thousands (2008 = 0)



Skilled – Trade and services – Not skilled – White collars – Blue collars

Source: il Mercato del Lavoro 2018- Minlav, INPS, Istat, ANPAL, INAIL

For the time being, the Italian labour market does not show the typical hourglass shape of the most advanced European economies, where demand is concentrated on high and simple professional profiles, with a bottleneck on intermediate profiles. In the present state of play, in theory, the labour market would be in the best conditions to absorb the labour force: women, high, low and intermediate profiles. Actually there are two potentially unfavourable variables to take into consideration: first, the economic trend that determines labour demand, and secondly, the gap between the professional skills required by demand and those available on the supply side, where the IT skills required by companies are very much lacking, but often also the basic vocational training necessary for manufacturing. There is also a lack of "transversal skills" that allow to optimize interaction and collaboration within a group and, more generally, to adopt "problem-solving" approaches, with critical capacity and initiative. Suffice it to say that the mismatch for ICT specializations is equal to 12% of the labour demand, but the average one, including therefore also the simplest or least skilled profiles on the digital plane, is as high as 20%, precisely because of the gap between digital and transversal skills required of workers and the skills they actually possess.

Within a virtuous path of growth, the replacement of retiring workers should not theoretically pose any problems, as they must draw on a vast reservoir of female and youth unemployment, but it is very likely that they will have to face the mismatch problems mentioned earlier. Basically, since companies in all sectors are oriented (obliged?) to digitize, if there are no specific actions of skill upgrading and profiling, the mismatch between supply and demand of professional ITCs will become increasingly wide over time and the labour demand trends may not find a response in the supply side. This would have a negative impact on both employment indicators and pay levels. By 2020, as a result of this lack of skills on the part of the workforce and of the young people who should act as replacements, the *European Commission estimates that 900,000 jobs could stay vacant*. This is therefore a transversal phenomenon from both a geographical and population point of view. In essence, the replacement of future pensioners between now and 2041 could pose problems precisely

because of the mismatch between the professions required and those currently present in the labour supply, with the effect of rendering the positive potential employment trends mentioned above largely ineffective. Even if some authors argue that newcomers are better educated than those who retire (however, it is useful to bear in mind that, in addition to education, work experience and long practice are also required), it is certain that an optimal correlation between educational pathways, with a school-work alternation system in tune with the demands of the labour market, could improve replacement processes.

4.3 Number of hours worked and number of employed workers: part-time and temporary work

With respect to the calculation of employment trends as an effect of population changes, it is appropriate to focus on two distinct parameters: the *total number of hours worked, and the number of employed workers*. These parameters are conditioned by two weight variables: the trend of part time work and employment in the growing sectors, especially with regard to digitization.

As far as part time work is concerned, the trend is strongly oriented towards growth and concerns above all female employment; since the beginning of the crisis, part time work has had the side-effect of improving female employment levels in Italy, which are still far from EU levels (see ***Table 4.3***) at around **49%**, with considerable growth margins.

Table 4.3 - Female employment rate in the European Union

GEO/TIME	2008	2017	2018
European Union - 28 countries	**58,8**	**62,5**	**63,4**
Euro area (18 countries)	**58,4**	**61,2**	**62,2**
Belgium	56,2	58,7	60,7
Bulgaria	59,5	63,1	63,9
Czechia	57,6	66,2	67,6
Denmark	74,1	71,5	72,6
Germany (until 1990 former territory of the FRG)	64,3	71,5	72,1
Ireland	62,2	62,4	63,3
Greece	48,6	44,4	45,3
Spain	55,4	55,7	56,9
France (metropolitan)	60,3	61,7	62,5
Italy	**47,2**	**48,9**	**49,5**
Hungary	50,3	61,3	62,3
Netherlands	68,1	71,3	72,8
Austria	64,8	68,2	68,6
Poland	52,4	59,5	60,8
Portugal	62,5	64,8	66,9
Finland	69,0	68,5	70,6
Sweden	71,8	75,4	76,0
United Kingdom	65,7	69,7	70,3
Norway	75,4	72,4	72,6
Switzerland	:	75,2	75,7
United States	:	:	:
Japan	:	:	:

This certainly points in the direction of replacement patterns caused by population trends, but bearing in mind that the increase in part-time employment units may not increase the number of hours worked or even productivity; part time may be a breakdown of the total number of hours but may also produce additional hours and thereby increase productivity. In general, each EWU (Equivalent Labour Unit) representing one standard full-time job corresponds in principle to two part-time jobs.

Paradoxically, population trends seem to create more favourable conditions for women's employment, with the part-time option to make up for the well-known shortcomings of public maternity/paternity services. But employment growth with a high part time content, while creating better social conditions, suffers from lower productivity growth; most part-time workers, in fact, do not have high professional profiles in the sectors with the highest labour uptake: manufacturing and traditional services. However, we can expect a significant increase in the number of women in employment, but not a corresponding increase in total hours worked.

Another important figure, with similar implications, is that of *fixed-term work*. In January 2004, fixed-term contracts numbered 1,813,000, equal to 11.3% of the total number of employees; in 2008, they had increased to 2,290,000, equal to 13.4%; from 2014, the number gradually rose to 3,042,000 in January 2019, equal to 16.9%, *in line with the euro area data*. The alerts about "precariousness" seem therefore exaggerated, especially if we consider that it is very likely that most of the fixed-term contracts have replaced bogus self-employment. From this point of view, the realignment with the European employment structure could be a positive fact, also in terms of transparency.[61]

4.4 The breakdown of employment data by age group

In January 2004, *the 15-24 age group* had an employment rate of 27.9%, and on the same date an unemployment rate of 23.2% and an incidence of the unemployed on the population (an important number because it also takes into account those who are not seeking employment, which is obviously very high in this age group) of 8.3%. In January 2008, these data had changed as follows: 24.6% employment rate, 20.2% unemployment rate, 6.2% incidence of the unemployed; these figures can be explained by the strong increase (+6%) in the inactivity rate, indicating that a growing number of young people stayed in school. The employment rate then fell rapidly to 15% in the crisis years and rose again to **17.9**% in March 2018. The unemployment rate increased to 43% in 2015, to fall back to 31% in 2018, with an inactivity rate that remained substantially stable (around 72-73%). It should be noted that the population of this bracket has fallen, from 5,945,000 in 2008 to 5,859,000 in 2018, but this change in population does not hide the sharp downturn in data over the past 10 years, although since mid-2017 there has been a modest but steady growth in both the number of employed workers and the employment rate.

In the 25-34 age group, the employment rate fell sharply from 70.2% in 2008 to 62% in 2018, while in the same period the unemployment rate increased by more than 6 points and the incidence rate of the unemployed on the total population by 4 points. The latter figure has been improving constantly since 2017, which also marks a reversal of the trend for this group.

The 35-49 age group was particularly affected: the employment rate fell from 76.3% in 2008 to 72.7% in 2018, the unemployment rate rose from 4.9% to 9.8% and, in the face of a population growth of over 500,000, the incidence of the unemployed on the general population increased from 3.9% to

[61] EWU = equivalent work unit. Corresponds to one full-time job.

7.9%. Moreover, in the last 12 months there have been no signs of recovery; on the contrary, the number of employed persons has decreased in absolute terms (-250,000), while those seeking work have increased (+ 35,000).

The 50-64 age group: The situation of this age group is quite the opposite, with the employment rate rising from 42.1% in 2004 to 46.8% in 2008 and then rising to 60% in March 2018. The unemployment rate, however, after having fallen from 4.2% to 2.7% between 2004 and 2008, also rose to 6.6% in 2018. This trend is confirmed by the unemployment rate with respect to the population in that range: from 1.3% in 2008 to 4.2% in 2018, and clearly visible if we consider total numbers: from 5,114,000 employed people in 2008 to 7,741,000 in 2018, and from 143,000 seeking employment to 545,000 today. The apparent paradox is generated by population trends, so that in recent years a significant number of people have moved onto the age group 50-64, in part, but not all, carrying over their occupational position: as a result, the inactivity rate of the group has fallen steadily (from 55% in 2004 to 35.8% today), as an indication of a growing number of people in this group, who theoretically are "almost elderly" and are active in the labour market. This should also be considered as positive in the light of the EU objectives, which indicated the need for Italy to increase the participation of older classes in the labour market.

This trend is confirmed by the data for the over 64s: since 2004, the number of employed persons has risen from 342,000 to 395,000 in 2008 and to 614,000 in 2018. In this last increase it is easy to see an effect of the Fornero Law on Pensions that followed the important series of reforms that began with Amato in 1992. Ultimately, during the crisis, the age groups over 50 have held up better in terms of employment, and they keep improving their data, thanks above all to population trends. The younger age groups (15-34 years old) are recovering from 2017 after a significantly negative impact. Excluding the population factor, however, employment recovery now affects all age groups.

4.5 Future trends for young people, women and the elderly

For *young people*, the main problem is the mismatch, which risks turning into a wall separating supply from demand, because of the loophole of short-term contracts based on a low professional profile. Here one of the biggest problems is the inability of the education-training system to adapt its programmes not only to a business culture (towards which high school education institutions in particular, and therefore elite schools, are deeply hostile) but also to a critical understanding of the digital society and the resulting ability to be its citizens. It is true, however, that there are training tools that can help overcome this obstacle: apprenticeships to obtain a high school diploma or degree, alternation between school and work, but above all Higher Technical Institutes, postsecondary vocational training courses, which run parallel to the University, promoted and managed by the Higher Secondary Schools and the business system in the area, provide vocational training at an almost university level and, above all, are perfectly consistent with the demand for skilled work.

These ITS currently involve about 28,000 young people a year in Italy compared to about 1,000,000 in Germany. *Addressing the school sector is the first of the reforms, without which youth unemployment cannot be seriously tackled, risking condemning the majority of young people to underemployment, and creating large holes in the system for the replacement of the workforce, preventing us from achieving the employment results we spoke about at the beginning of this chapter.*

For *women*, their willingness to work shifts and low-profile jobs is likely to meet the natural trends in demand, with positive effects on employment. Without nurturing senseless ideas of hindering it

(they would not generate full time employment, but unemployment) it is in the interest of companies themselves to enable women who would like to give more at work to do so. The necessary measures, even if still insufficient, such as the availability of crèches with working hours in line with work requirements, are already in place and are beginning to be implemented, such as corporate welfare initiatives (incentives and facilities for childcare, flexible working hours, smart working).

For *the elderly* over 55 we already see an increase in employment (helped by population trends but still significant) which shows an employment rate above 52%, which is significant compared to 28% prior to the Lisbon Treaty (2001) and still 6 percentage points below the EU average. Essentially, the driving force behind this employment growth are pension reforms that have high age and contributory seniority for retirement. It would seem, and in part is, an obligation to keep working without willing to. However, a 2014 Eurostat study shows that 5,000,000 workers in Italy (more or less on average with other EU countries) say they would gladly postpone retirement if they could have more friendly working conditions: flexible working hours, adequate work organisation, and reduced workload. It seems clear that acting with targeted policies in this group of workers could give an important contribution to the achievement of the objectives mentioned above while limiting the pace of exits from work. Measures aimed at early retirement, such as "the rule of 100", move in the opposite direction to the objectives of the Lisbon Treaty and, regardless of the effects on the financial balance of INPS, drive down the number of workers. However, there is a potential employment resource for jobseekers and foreigners: *personal care*, especially for old-age pensioners. It is a form of welfare which today is exercised on a voluntary basis or through direct contracts (more or less regular) between family and worker (carer, for the most part). An investment (already tested in some local contexts) in vocational training for these people, and a structure capable of organizing home care and ensuring its quality would not only provide necessary social services (also to relieve many women from care work and allow them to grow professionally) but also bring many people back into the labour market, thus increasing employment rates. However, if a quality market is not developed for public care and services, the effect will continue to be the opposite, i.e. a burden on informal family welfare that is squeezing rather than encouraging female employment.

At present, one of the most suitable reasons for Italian women to be inactive is precisely the burden of caring for vulnerable family members, where older parents' burden is increasing.[62]

4.6 Prospects for employability in an ageing population

Taking into account the different problems described in the previous sections, it can be observed that the combination of population and economic trends opens up the possibility for Italy to increase the employment rate, by absorbing young people, women, the elderly and foreigners into the labour market through simple "*natural*" replacement under more or less constant conditions. It is an option that is worth pursuing, knowing, however, that *an increase in the employment rate will require (conditio sine qua non) incisive reforms but also active labour market policies that guarantee effective guidance and support for placement and replacement*. Failing this, employment can only fall, with detrimental effects both on the inequalities in the labour market between skilled and unskilled workers and, for obvious reasons, on wage levels, which trade unions will no longer be able to control. On the other hand, an increase in employment levels and a reduction in unemployment below 5%, changing the elasticity of labour supply and demand, should lead to a trend of rising wages

[62] See Golini A., Rosina A., *Il secolo degli anziani. Come cambierà l'Italia*, il Mulino, 2011.

with a consequent increase in domestic demand, which will be largely directed towards forms of social protection (participation in pension, health, LTC, etc..) and the purchase of welfare services especially for the senior family members that the worker will not be able to take care of.

As shown in ***Table 1*** of the first chapter, the percentage of employed *people over 55*, currently at about 53%, has increased by more than 9 percentage points in 11 years; this increase is expected to continue in the coming years due to the effects of the pension reforms carried out between 1992 and 2011. This increase in the retirement age is partly due to the constraint imposed by the minimum requirements but, to a greater extent perhaps, depends on the choices of the workers who consider the difference in the total pension in relation to retirement age. This difference will tend to become more pronounced, especially since already by 2020 around 80% of potential pensioners will have at least 60% of their pension calculated by the contributory method and this share will exceed 85% in 2021 and 95% in 2022. This means that an employee retiring at 62 years of age with 35 years of service in 2020, having an estimated pension calculated for about 30% with the salary method and 70% with the contributory method (the so-called "mixed pension") will suffer a reduction in the amount paid as a result of the ratio between the conversion coefficient at 62 years of age and that at 67-years and a few months of about 10%[63]. In simpler terms, the employee would therefore have an income equal to 70% of the income from work with a pension calculated on a salary basis and 63% if calculated with the mixed system.

Considering that the old-age pension today is set at 67 years of age, and that in the future increases between 2 and 3 months are foreseeable for each two-year period, and that at the same time the transformation coefficients of the pension amount will be adjusted to life expectancy (with a reduction in the amounts for younger age groups), it is not unlikely that by 2045 the employment rate of the over-55 will increase by a further 9/10 percentage points, at around 61%. As the cohorts of the over-55s are set to progressively increase in size in the population age structure, this would also improve the overall employment rate, which could increase from the current 59%.

With population ageing, it can also be assumed that *personal care* activities will also increase, especially if these services are promoted from a fiscal point of view as well, both through deductions from the income earned in carrying out services and through deductions for the expenses incurred by those who receive such benefits. The development of these services, although the sector is not exclusively dominated by women, could increase the *female employment rate* by at least 5-7 percentage points (currently it is 49.5% compared to 48.9% in 2017), helping to improve the overall employment rate.

Finally, we must consider the *reserve* of the currently inactive, irregular and unemployed workers, whose numbers are given in the introductory chapter, and who can largely bridge the gap between the number of workers who retire, generally belonging to very large cohorts, and those who enter working age from smaller cohorts. It should also be pointed out that the over-65s and over-67s benefit from and will continue to enjoy good health, and regardless of the essential policies for active ageing, they will, as is already starting to happen today, take part in voluntary work to support the weaker age groups.

[63] This percentage of reduction is obtained considering that, with the processing coefficients used for the calculation of contributions, each year of advance involves a cut of about 3% of the amount of the annuity. Therefore, if the calculated contribution share is 70% of the entire pension, an advance of 5 years determines a cut equal to:
5 years x 3% x 0.7 (contributory share) = about 10%.

Another possible option for the future to bridge any gaps between exits and entries into the labour market in order to stabilise and increase the employment rate is the opening-up of *selected entry channels* (also by means of international calls for tenders with countries that have signed agreements on migration and repatriation) for immigrants by type of work; for example, we could assume that in 2023 100,000 workers specialised in mechanics could be admitted, integrated and regularised; and the same could be said for some professional profiles already present irregularly in Italy for years but who, with appropriate integration processes (employers' testimonies, amnesties, guarantee deposits, a test of knowledge of the Italian language, integration courses, etc.), could be regularized. And all this within the number of net entries (150 thousand) indicated in the forecasts or even more if labour demand increases.

If viewed only from the population point of view, the problem of ageing, *which has a negative impact on the country's development rates*, may appear to be very much oversized; as has often happened in the course of history, societies find points of rebalancing and the employment structure of our country makes it possible to overcome this strong population transition. In the future, in addition to GDP and growth rates (which cannot be endless because of the well-known limits to development that have been known since the times of Aurelio Peccei and the Club of Rome), more indicators will be included that are no less important for the level of social sustainability of citizens. The problems with employment will find new balances, perhaps with a higher average age thanks to new technologies and the renewed organization of production that will further reduce physical effort; the industrial policies of active aging, in addition to the effects of social security reforms and advances in medicine will also allow the over-65s to continue their work with tasks more appropriate to their age (experience and skills acquired to compensate for the reduced physical capacity) [64].

It should also be noted that it will be difficult in the future to have many entries into the labour market under 19/20 years of age and considering, on the one hand, the intermittent careers and, on the other hand, the inevitable training periods that will last throughout the working career, retirement beyond 66 years of age will be the rule.

As a result, the active/retired ratio, beyond the temporary slight reduction due to the provisional opening of facilitated exit "windows" that result in an early retirement flow compared to normal requirements (rule of 100, Ape, Opzione donna and precocious workers), which should also be reabsorbed over 5 years, may, with the underlying scenarios, improve from the current 1.46 (i.e. 1.46 active workers for each pensioner) to over 1.6. This value in a share-based management system that operates under the contributory calculation method, should lead the pension system to a situation where the accounting balances between contributory income and expenses for benefits are better balanced[65]. In the last 20 years of reforms we have gone from a ratio of one pensioner for every 1.2

[64] More information on the link between population ageing and employment can be found on the OECD's Ageing and Employment Policies website (www.oecd.org/els/employment/olderworkers). In particular, updated country studies were published in 2018. For Italy, see: *Key Policies to Promote Longer Working Lives in Italy*, edited by the Ageing and Employment Policy Team, with a contribution by Nicola Duell.

[65] To clarify this statement, we can start with the break-even balance of the pension accounts that occurs when the contribution income (***C***) equals spending on benefits (***P***). Whereas $\boldsymbol{C = a \,.\, w \,.L}$ (at contribution rate; w average wage; L employed) and $\boldsymbol{P = p \,.\, R}$ (average pension; R number of pensions paid, the balance condition can be reviewed as $\boldsymbol{a.\ w.\ L = p.\ R}$. This equation indicates that $\boldsymbol{L/R = p/(w.\ a)}$. By replacing the symbols with the actual values and taking into account that the current contribution rate is 0.33 and that under the contributory system, given the salary dynamics and the indexation of pensions, the p/w ratio can be valued at around 0.5, we have a value of the ratio between active contributors and pensioners (***L/R***) of about 1.52.

active workers to the current 1.46. As in the case of the rule of 100, in five years' time the higher costs will be reduced to less than 0.6 billion and zeroed in the next two years; in this period the State will certainly have spent more, but the ratio will remain stable in the medium term.

A final remark - in brief because this topic will be discussed in greater detail in the next section - must also be made on *productivity*. In fact, despite an impressive expansion of digital systems in the last 5/7 years in Italy, especially in banking systems, in transport (Telepass, electronic ticket offices, motorway toll booths and other automations), in urban transport (ticket offices, entry automation, unmanned vehicles or with reduced personnel) in the transmission of data (telephony, the internet and social media) - and we could go on - there have been no particular increases highlighted and recorded by official data. On the contrary, in the next few years, our country shall have a productivity performance close to zero. However, it seems clear that there is something wrong with the surveys and this has a negative effect on the performance forecast for the future of our country. In general, as a result of the *radical changes in the composition and quality of modern economic output*, it is inevitable that we will have to change the methods for measuring productivity, taking into account the new services, new jobs and the intangible nature of a growing part of production: what productivity can be attributed to those involved in cultural heritage, event organisation services, ticketing, artists, sportsmen, riders, the various Uber and so on. In other words, one wonders whether continuing to use the obsolete technique used today for public employment can still be considered a well-founded methodological criterion; one wonders whether employment is increasing in sectors whose product is intangible; is it correct to note that productivity is growing less? For example, automated purchasing procedures based on production needs or electronic invoicing are intangible, often traded in markets that are not very competitive, but surely generate a huge increase in productivity that is not recorded, and yet, all that is done on the move, in waiting times or at any time with smartphones (work mail, phone calls, Instagram, etc..) is it not increased productivity?

Despite this massive automation and this non-formalized work activity, employment has tended to increase: maybe we should reflect on these issues.

5. Macroeconomic variables, productivity and economic growth

Population projections are the main pillar of economic forecasts covering several decades. In the paragraph regarding population, a key date has been indicated, i.e. 2045, as the year, or the years around it, when there will be the greatest negative difference between those entering the active population (20-24) and those leaving (70-74). Clearly, we are talking about a population that is almost all already born and living now. Demographers, as already shown, have very accurate models to tell us how many people will die in the meantime and how many will be born over the next seven years. The forecast of the local population at that date can therefore be predicted with a negligible error and, consequently, also its dependency rate on the elderly population is predicted with almost absolute accuracy, except in cases of epidemics. This can be clearly seen on the graph in the population analysis paragraph, where the stochastic prediction of the population age distribution in 2045 shows a progressively decreasing level of uncertainty as age increases. Without prejudice to the fact that in that forecast the uncertainty mainly concerns immigrants. In fact, as far as the dependency rate with reference to the entire population is concerned, it obviously depends on the scenarios for net immigration flows and the age distribution of new immigrants[66].

In short, for very long-term economic projections, the key element is the projection of population, the variable for which uncertainty is lower. The role of economists is to make the most of the implications drawn from this population scenario. To this end, it does not only measure population size, but also age composition and, last but not least, quality, especially for the working age population. The following aspects will be examined in detail below.

a) Population

Quantity. Of course, it is not the static dimension of population that we are interested in, but its dynamics. In economic terms, there are no doubts or opposing opinions: a positive growth rate of the population, all other things being equal, is associated with a positive potential growth rate of GDP. A population that is growing in number fosters growth in both overall demand and potential supply; the same applies to a population that is decreasing. This does not necessarily imply that the level of well-being of a population whose GDP is significantly growing is better than another; if we only use GDP to measure well-being, we must consider the level and dynamics of GDP per capita (per inhabitant). From this point of view, in abstract terms, a population decrease (and therefore also potential GDP is decreasing), if it succeeds in increasing the productivity of those who work at a rate higher, in absolute terms, would increase GDP per capita and therefore, for this aspect, its well-being. In any case, as already mentioned, lower population growth, lower *potential* GDP growth.

Underlining the word potential is important. In fact, if economic policy is unable in the medium term to determine a growth in aggregate demand that saturates production capacity, actual GDP growth will be even lower than potential growth. But *very long-term forecasts cannot take into account the contingent factors that determine demand and therefore focus on the factors of potential growth*. The purpose of these forecasts is to outline the underlying trends that policy-makers should be aware of

[66] In the shorter term, by the end of the current 2018-2023 Parliament term, all those born in the ten years 1946-1956, during the first baby boom immediately after the war, will have already retired. This Parliament is therefore the first one for which population ageing is no longer a problem to be looked at only from a future perspective, but to be tackled in the present. The following figures may be useful: 1.5 million more people over 65, 600 thousand fewer Italian citizens in working age and an estimated 600 thousand more net immigrants.

in order to guide the country's economic policies and to ensure that any overlook of the underlying problems is deliberate and responsible.

Breakdown. The reasoning on population size so far is not sufficient; it would only apply to an unrealistic case of an epidemic equally affecting the entire population by age. Actually, the transition to a smaller population size is characterized by a change in the age composition. In other words, as time goes by, it is the number of people potentially at work who earn an income and who consume that will change; a number that will gradually decrease with respect to the growing number of people who do not work and consume through transfers that they receive either from contributions paid by those who work (wages), or from profits and/or interest received on their financial wealth (profits). In the case of interest, if it is interest on public debt, rather than on bonds issued by companies, consumption is allowed by transfers mediated by taxes on all incomes (wages, profits and the same pension income, in this case through redistribution among pensioners); taxes that will be higher as the public debt and therefore the interest itself will be higher.

Moreover, with an ageing population, the number of non-self-sufficient people increases and therefore the number of those employed in care work also increases, which means that these people will also represent a burden for their consumption on the production of goods and services of productive workers. In other words, the reduction of the population and its ageing will put pressure on resources: the processes of redistribution from productive workers to those who do not work or work in care will be increasingly intense, accompanied by an ever-increasing electoral burden of the elderly who have already retired, or who are close to.

Economists have long considered these tensions on potentially inflationary resources (and/or generating imbalances in foreign accounts) and most likely they will be accompanied by a change in relative wages between young and old, thus flattening the pay curve by age of the workers. Assuming that active labour policies (see previous chapter) will in the long run make it possible to absorb unemployment to a reasonable extent as well as to increase the participation of women in the labour market, the slimmer generations of entrants into the labour market will witness their wages rise compared to the more mature workers for whom the mechanisms of automatic wage increases will lose significant weight, on pain of a significant increase in average labour costs, given the growing number of older workers. At that point, the balance between the adequacy of the consumption possibilities of those not working (including those caring for them) and the consumption and saving needs of those working will depend on the net flow of immigrants who have been integrated into the economic and social system so that their life plans allow them to provide productive capacity that exceeds their consumption demand.

But the age composition of the population will also affect the rate of capital accumulation as a result of the fact that different ages have different propensities to saving. The above considerations on the possible inflationary (and/or imbalance with foreign countries) impact of population ageing are based on the assumption that the working-age population has a higher propensity to save and that it will fall significantly after leaving work. The lower propensity to save of the whole economic system, which is supposed to be working at its potential level at that point, would reduce the accumulation of capital with consequences on growth that would entail a lower availability for the financing of investments and therefore a lower contribution to the increase in labour productivity.

Japan is the only developed country that is ageing faster than ours. The empirical observation of the events in Japan does not seem to support this scenario of reduced propensity to save and the

consequences indicated above. The suggested explanation is that the elderly who are no longer at work do not reduce their propensity to save because of fears linked to the risk of increased longevity, which for individuals who do not take risks entails an estimate of greater likelihood of not being self-sufficient. This phenomenon tends to make Japanese savings excessive and ends up being compensated by the destruction caused by the public deficit.

How people who are no longer at work will behave in their consumption and saving decisions is therefore crucial to determining a coherent framework within which to assess the possibilities for long-term growth. In other words, the very long-term projections being made are implicitly influenced by the outcomes of these behaviours, which in the long run may affect investment in productive capital and in education and training of human capital.

No assumptions are made in this respect in the RGS and WGA projections. It can be observed that the comparison between the trend of real and nominal GDP results in an implicit dynamic of the GDP deflator of about 1.3%, which rises to 2% per year. In other words, it is assumed that the European Central Bank implements a monetary policy capable of maintaining the inflation rate at the level corresponding to the objective assigned to it. If the behaviour described above were to manifest itself in inflationary pressures, given that in the next few decades the contribution of China and the Emerging Economies to keeping inflation in the developed countries very low would be over, this would imply a tighter monetary policy to contain inflation to 2%. This could be an obstacle to growth. At the same time, the above considerations about the possible increase in the propensity to save could release increasing amounts of capital for investments that would stimulate productivity gains that at least tend to compensate for the reduction in the rate of potential growth due to the reduction in the active population.

Population quality. Another similar expression is the size of human capital, that is, the average level of education of the population and, in particular, for our purposes, people in working age. There is no doubt that the quality of our human capital has increased over time, as new and more educated generations have become part of the active population. But we must not forget that since the average quality of human capital is consequently lower for older cohorts, so, as Asher Colombo and Gianpiero Dalla Zuanna have observed, the group of people who leave work have an average qualification that is lower than that of the generations who enter the labour market[67].

This phenomenon, which only concerns the level of education of those entering and leaving the labour market, will continue for some time, most likely until the mid-thirties, but the anticipation of the balance between the qualification of the jobs left by those retiring and the qualification of those entering the labour market will largely depend, regardless of the nature of the educational qualifications of young people, on the nature of technical progress and therefore on how many low-skilled jobs will be lost. If the latter phenomenon were confirmed, it would contribute to the employment of young people.

67 "*Ascesa e declino delle immigrazioni in un paese diviso. Italia 1977-2017"* (about to be published). For the years at the beginning of the crisis, 2007-2010, the authors estimate that the gap between 60-64-year-olds and 20-24-year-olds, both of whom did not graduate, was 400,000, which was roughly equivalent, in the same years, to the number of new immigrants, obviously with low qualifications (by chance?). This helps to focus on the difficulties in taking in unemployed young people, who, in those years and also in the following ones, would not replace immigrants.

b) Productivity

The gross domestic product of an economic system is given by the combination of the quantity of work and the quantity of capital multiplied by a factor of systemic efficiency that, with the same quantity of work and capital employed, allows to obtain a higher gross domestic product. This contribution is called total factor productivity (TFP). The latter depends, in short, on the overall organisation of the economic system and the degree to which technological innovations are shared.

For the sake of clarity, the potential GDP generation can be represented as follows: The potential GDP formation can be represented in this way:

$$\mathbf{Pil = TFP * f(Q_L*L; Q_K*K)}$$

Where: f is the symbol of the entire national production process that transforms the *quantity* of work (L) and capital (K) into GDP; QL and QK represent the qualities of work and capital respectively.

Therefore, the evolution of GDP over time depends on how the quantities and qualities of work and capital change, whether or not favoured by systemic efficiency (TFP) and its evolution.

We have already talked about the quantity of work and its potential decrease after absorbing current unemployment and making 65/70 per cent of the active population work; about its quality (education and/or training level) it is necessary to add that its average level is currently lower not only than that of the other developed countries, but also that of the first generation emerging countries. It will take years to fill the gap; years during which growth will be penalised by our backwardness.

With regard to the amount of capital, there should not be significant shortages. In fact, when the number of workers begin to decrease, the quantity of capital goods could be excessive and consequently even under the assumption that aging leads to an increase in the propensity of the economic system to consume. All the more so if the prudence of elderly people leads them to maintain, where possible, savings levels that are not very different from their working age years.

In this regard, however, it should be noted that as regularly observed, the economic systems most burdened by public debt are growing less in the long run than those with a lower public debt. In the long term, the financing of public debt competes with investments in sharing the savings of the economic system. The discriminatory values of the negative influences of public debt have been statistically identified - by observing the past behaviour of a hundred countries - in the range of 90-100 % of GDP. A public debt higher than that share of GDP tends to be associated with lower growth rates, as if such debt were limiting investment in productive capital and in the education/training of human capital, to which we referred earlier. This is another issue that cannot be overlooked when considering the information provided by the RGS and WGA projections. Obviously, the trends in public debt cannot be considered an exogenous variable in the prospective scenario, since they are also determined by pension spending.

Moreover, it is very complex to endogenise trends in public debt, which is why there is still a negative risk component to the multi-year projection of GDP. In fact, the key aspect of capital's contribution to growth is its quality, that is, the degree of technological innovation that new capital goods incorporate; technological innovation that tends to replace obsolete capital goods, already amortised,

with new ones whose cost, given the same productivity, is lower and therefore this is another reason why it can be assumed that there will be no capital shortage in the future, except for the possible effects of non-reduction of the public debt-to-GDP ratio. Spending on new technologies that are expected to significantly increase productivity should not be hampered by financing. The evolution of productive technologies is so full of promises (first of all computerisation and, eventually, artificial intelligence) that it seems paradoxical that looking at the first decades of their application, the systemic productivity of labour has continued to slow down growth, which has been going on for 30/40 years in all developed countries[68], but not only.

The debate as to whether we should expect a positive leap in productivity brought about by new technologies is very open: i) there are people who claim that the promises about the future are false; ii) others who think that we have not seen any increase in productivity in recent decades because we are faced with difficulties in measuring it both in the past and in the future; iii) others, finally, who simply believe that there is a very long delay in its dissemination to the whole economic system.

However, improving the quality of the capital invested increases the amount of product per euro spent on investment, but since any assessment of the aggregate capital stock of a given economy is very complex and questionable, one usually measures apparent labour productivity rather than capital productivity. To this end, GDP is correlated to the number of employees, even if an increase in this productivity measurement does not necessarily express a mere increase in the quality of work or a greater effort on the part of the workers, but may be the result of a different organisation of work and/or a supply of more efficient tools. This, in turn, may also require a different training of workers to adapt to changes in the working environment. It is therefore this synthetic measure of the quantity of product that an employed worker makes available to the economic system with its own direct and indirect capital contribution that is following a downward trend in terms of growth. As documented in various international studies (***Figure 5.1***).

As a result, labour productivity thus considered, in a context in which the amount of work available is reduced, becomes the fundamental variable for the sustainability of population ageing with its associated redistribution of income.

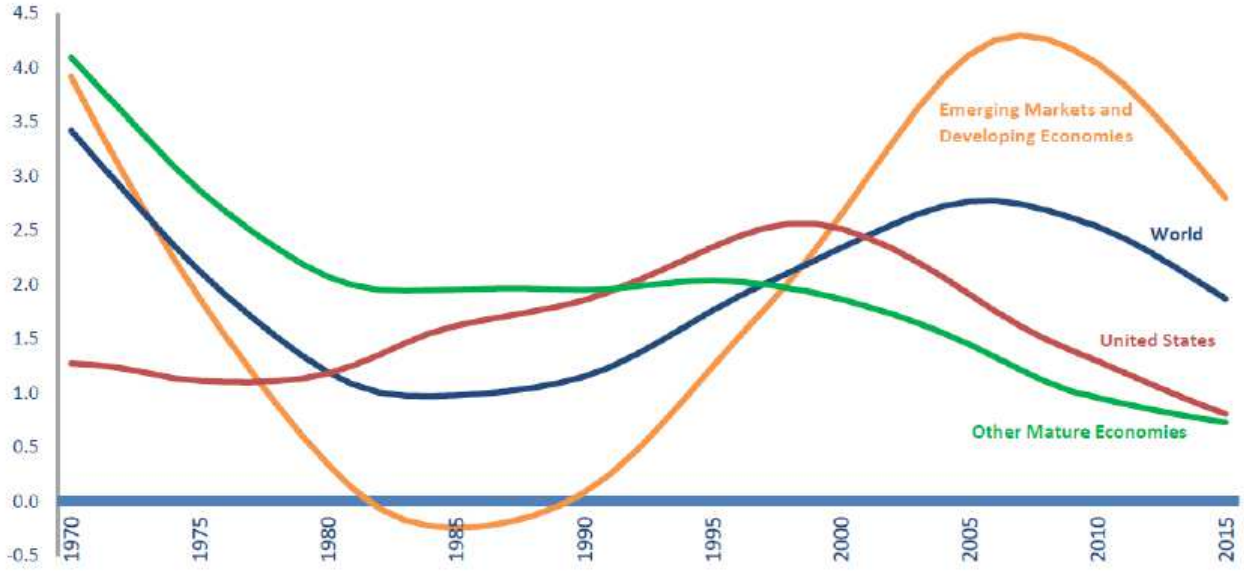
In order for productivity to be able to give financial and social stability to the pension system, its increase must therefore concern the entire economic system. The slowdown in growth of systemic productivity over the last fifteen years is a problem common to almost all mature economies, including the United States, which is supposed to be at the forefront of technological progress. In order to support the increase in systemic productivity, productivity in the manufacturing sector, which is the most innovative, must grow very rapidly given the decreasing weight that manufacturing has on total employment. In the data of the OECD and the Bureau of Labour Statistics, the share of employees in manufacturing has fallen from an average of 27.6 per cent to 12.4 per cent in the nine main advanced countries between 1973 and 2016, despite the fact that the three top exporting countries (Germany, Italy and Japan) whose manufacturing industry is the most important are also included.

This phenomenon has been known for a long time, as it has been known for a long time and confirmed by the most recent data that employment in the same countries is mainly growing in services and in

[68] See E. Brynjolfson, D. Rock, C. Syverson, Artificial Intelligence and the Modern Productivity Paradox: a Clash of Expectations and Statistics, *Working Paper* 24001, NBER.

particular in healthcare and personal services. This is a reflection of the fact that the percentage of consumption of goods and services is decreasing, as is the relative price of goods compared to that of services. To boost systemic productivity, its growth in manufacturing should also be accompanied by an increase in service productivity. The implementation of new technologies in some service sectors can help to push up productivity in these contexts.

Figure 5.1 – Smoothed Average Annual Labour Productivity Growth (Percent) by Region
(taken from Brynjolsson et al.)



Source: The Conference Board total economy database, Nov. 2016. I trend dei tassi di crescita sono ottenuti con il filtro Hodrick-Prescott assumendo l=100

Figure 5.2 - Italy - GDP at 2010 chained prices per employee
(a) five-year moving averages of the % changes (b) logarithm of the levels

As can be clearly seen from the graphs, the exogenous hypothesis about the trend of labour productivity, which is used for the projection of GDP by both institutions, implies a reversal of past trends. This positive trend reversal, less intense for WGA projections, stems from the assumption that technological innovation, its global diffusion and education/training processes will give an important impulse to our growth, capable of compensating for the reduction in the quantitative input of labour.

Obviously, this can happen if economies in the coming decades do not close themselves off to world trade.

To sum up: the least uncertainty that we have when we look fifty years ahead concerns the evolution of the number of Italian citizens and their distribution by age; a growing uncertainty should be considered when we look at: in the next few decades we will have to look at the number of Italian citizens and their distribution by age:

- the size of net migratory flows and our ability to integrate them;
- the effectiveness of labour policies in reducing the mismatch between labour supply and demand and therefore bringing the unemployment rate down to an almost frictional level;
- a family services policy capable of increasing the participation of women;
- investment in education and training to enable human capital to interact with technological innovation;
- to establish favourable conditions for the diffusion of innovation well beyond the segment of premium enterprises;
- Finally, to avoid that the public debt takes up increasing resources.

It is also necessary to consider the uncertainties that arise from the international scenario.

- China and South Korea are the emerging countries that are ageing fastest and will see their active population decrease starting from the coming thirties;
- their labour costs will increase, but this will also increase their incentive to reach the frontier of technological evolution and we already have many examples now;
- the high quality of their human capital in which they have invested for a long time is superior on average than the highest levels of our country;
- even our leading companies will face competition which may put them at risk by repositioning these emerging economies in higher segments;
- an important advantage for them is that they have a large volume of domestic demand to exploit economies of scale to a greater extent;
- in the long run, India and the African continent will continue to support the growth of the world's population.

The forecasts of GDP trends formulated by the RGS and the WGA, envisaging a major reversal in the growth trend of labour productivity, assume that over the next twenty years the problems of our labour market and active employment policies mentioned in the previous chapters have been resolved. In other words, the conditions are to be created to cope with population reduction and ageing without significant shortfalls in well-being as summarised in the per capita GDP, returning to growth trends not too dissimilar from the past[69].

There are also other aspects of the policies that could further move in the direction of supporting labour productivity growth:

- incentives to increase the average size of enterprises;
- our medium-large enterprises have the same productivity as those of other advanced countries;

[69] The following graphs show GDP and per capita GDP logarithms. The use of logarithms, instead of the original absolute values, is essential when comparing very long non-stationary historical series (118 years here). In this way, the same section in the Y axis represents the same change in percentage. In other words, the one-point increase in the value of the logarithm always represents the same change in percentage of the original variable. This reduces the "optical" distortion that would be introduced by using in the long run the original values of variables that grow systematically over time.

- it is their small number that limits average productivity;
- reforms of civil justice, security and the infrastructure network.

This set of reforms as a whole would help to make the submitted GDP projections more optimistic, especially with reference to the WAG projection, which pushes the change in the evolution of productivity by about twenty years compared to the RGS projection and consequently adjusts the change in GDP and per capita GDP growth accordingly.

Are these heroic scenarios? Each one is able to judge it on their own. If some of them were to turn out to be such, our problems would escalate. The risks that these GDP forecasts entail, as can be clearly seen from the graphs that align the forecasts with the historical evolution of the last seventy years or so, are to assume a change in policies, but above all in systemic productivity trends.

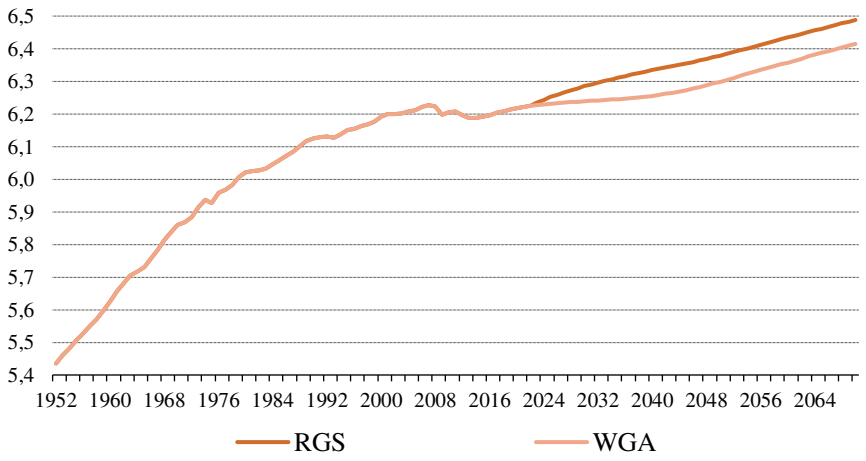
The set of uncertainties surrounding the forecast of the denominator of pension spending/GDP ratio could lead to the question of what is the usefulness of such a forecast. A random forecast is always better than no forecast because it constitutes an important stimulus to reflect on the present state and on what phenomena are involved in GDP trends, how they could develop and the risks to which this trend is subject.

All this being said, it should be added that, in addition to the reforms indicated, it is necessary to consider that it took twenty years (1992-2012) to define a public pension system that includes all the necessary mechanisms for its real and financial stability. Another unnecessary intervention was implemented during 2019; it mitigated the effect of these servomechanisms.

In any case, it is now necessary to allow this system of rules to settle in the economic system and in individual behaviour, thus favouring their internalisation by employees and the self-employed and reducing the sense of uncertainty that generates the continuous change of the rules. At least ten years of silence about the pension system and, in particular, its absence from every electoral campaign. In these terms, any additional prospective burden that emerges from the evaluations presented in this Report may be taken into account on the basis of the actual evolution that will have occurred over the next decade.

Figure 5.3 - GDP

logarithm of values at 2010 chained prices

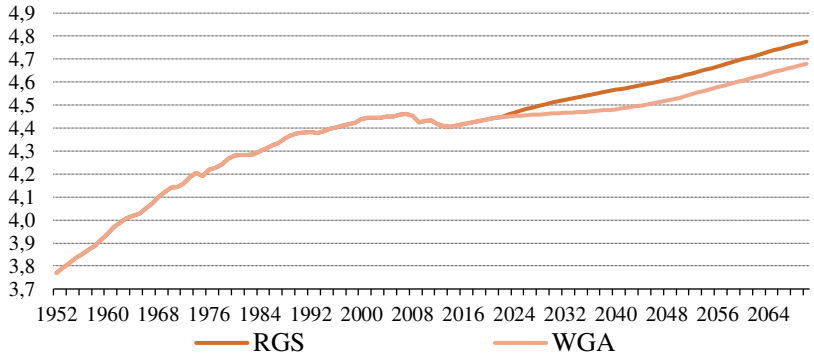


Source: Prometeia forecasts up to 2022

Compared to the dynamics of the past 66 years, the forecast of real GDP level trends made by the RGS appears to be quite optimistic compared to the WGA trend, especially for

Figure 5.4 – per capita GDP

logarithm of values at 2010 chained prices



Source: Prometeia forecasts up to 2022

6. Results, conclusions and proposals: dos and don'ts

In the previous chapters we have analysed the limits of the forecasting models whose results would sentence our country to an economic and population decline that would have serious repercussions on the entire social protection system and, in general, on well-being levels. Is there something we can do to avoid this scenario?

First of all, we have established that the forecasting models have limitations, that the reporting of social spending and other budgetary variables including productivity and employment are at least questionable and improvable, and that population trends, labour markets and productivity, in other words "development", are only partially written. Consequently, if the general picture (population trends, labour market and overall development) is the one examined so far, let us try not only to make some proposals to avert the risks highlighted in the previous chapters but also, in the light of the policies pursued so far by several governments, to indicate what should not be done.

6.1 A general remark

Italy is one of the few countries in the world with an extremely high level of social protection; however, the media often speak of hospitals that do not always work well, of problems with youth employment, of impoverishment of our country, of decreasing incomes and so on. But what is happening around the world? To mitigate the Italian custom of constantly weeping, it is useful to recall that there are more than 7.5 billion inhabitants on our planet, but only one inhabitant in six (less than 17%) has everything an Italian citizen has (potable running water, toilets, electricity, television, newspapers and above all "social protection" and the relative welfare services, such as hospitals, schools, pensions and so on). In many parts of the world people live on less than 2 dollars a day, hospitals are a dream for a few as is school, often for a fee; in such countries the future is only a word without great value. Only 1.2 billion individuals enjoy some form of social protection, but those who can have schools, hospitals, health care and welfare, pensions and benefits as in Italy are less than 600 million in the world, approximately 8%! Of course, these considerations do not solve the many problems that plague our country, but they should induce public decision-makers to adopt more proactive attitudes in order to put in place reflections, proposals and initiatives that can make the future, which is too often perceived to be bleak, rosier in the minds and expectations of citizens.

6.2 Pensions

6.2.1) ***Accounting classifications and statistics***: A first proposal is for a review of the accounting and classification systems for social and pension spending, especially because it is the accounting results that determine European policy decisions and assessments. As we have seen, the pension spending calculated by the different institutions varies greatly and, except for INPS and the Report of the ex Nucleo di Valutazione della spesa previdenziale[70], it is not broken down into pension spending net of welfare; even more, ISTAT includes a number of items that are not pensions by definition (notes in chapter 2). However, ISTAT data is what matters in Europe and since it is very high it creates many problems for our country.

[70] The Nucleo di Valutazione della Spesa Previdenziale (Social Security Spending Evaluation Unit), which operated at the Ministry of Labour and Social Policies, was dissolved by decision of the Monti Government. Since then, the Annual Report has been provided by the Scientific Technical Committee (STC) of Itinerari Previdenziali.

But is it all Istat's fault? Certainly not: a large part of responsibility lies with the governments that have succeeded one another in the last twenty years. In fact, although the EU Commission in its directives has repeatedly called on Italy not to burden the "***pensions section***" with spending items that would have been more appropriate to attribute to other sections, our governments have focused everything on pensions, perhaps because of poor preparation but also for electoral gain. After the period of the great reforms (Amato, Berlusconi in part in his three governments, Dini and Prodi), it was Berlusconi who burdened pension spending with the so-called "one million lire a month" pensions in 2001; if we wanted to help the poor in difficulty, it would have been enough to entrust one of the ESPROSS - European system of integrated social protection statistics (on social exclusion, family, etc.) functions with integration for the needy. Other measures then followed: tax breaks for young people and the unemployed, tax breaks in the South (carried out for more than 20 years with unsuccessful results), early retirement (which should have been included under the "income support" heading), 14th month's salary, social APE, precocious workers, citizenship income, rule of 100, to mention the main ones, which despite being essentially welfare, have been included in the "pension category". If these are the "*things that should no longer be done*" in the future, let's see below what could be done instead.

Dos:

First of all, it is necessary to reorganize, through appropriate measures, all these facilities by defining a welfare structure only after having created the "*general register of care*" (see below) and a second-pillar system of funds for active and passive policies (the redundancy or solidarity funds referred to below). In addition, one should:

a) create an index for pure pension spending only (also with a double indicator on income and expenses gross and net of taxes that are not consistent across countries); another index regarding welfare that, as we have seen, grows at more than 5% per year; finally, a third indicator for accident annuities managed by INAIL (also here with income and expenses). We would discover that pensions are in balance, and we would not be the "worst in class" in Europe but, above all, we would not insist that pensions and pensioners be included in every budget law.

b) Finally build a ***data bank on welfare*** where all the services provided by the State, public bodies and local bodies, to which the services offered by the private sector are associated, can be added by tax code and household; we would finally know how much each individual or household gets from the various providers and, as with the citizenship income, there should be a significant saving on the approximately 130 billion euros spent on general taxation[71].

c) Provide every two years a statement of account showing the amount of direct taxes paid and the cost of a citizen, or their family, in terms of care, health and education. Such information may seem provocative but it would not hurt for a more correct and "conscious" civic education and perhaps many would no longer have reason to complain about paying too much tax.

6.2.2) Complete the pension reform cycle: If we want to identify measures to complete the long, and not always linear, reform of the Italian pension system, we must start by considering the following points: **a**) both the so-called rule of 100 and other recent pension measures are "*experimental*" and have a limited duration (3/8 years, after which there should be a return to the Monti - Fornero rules);

[71] See 6th Report on Pension System Review, 2019, Itinerari Previdenziali.

b) there is a need (especially for the contributory calculation method) to reintroduce the initial criteria of flexibility on exit provided for by the Dini law; **c**) the Fornero law discriminates against pure young contributors compared to other workers. It would therefore be necessary to finally complete the cycle of pension reform, with the aim of *rewarding actual work and discouraging the many opportunistic behaviours*[72]. In our opinion, in order to achieve this objective as from 2020/2021, the following regulatory guidelines should apply to all workers, whether they choose the salary-based, mixed or contributory systems:

a) without prejudice to the legislation on arduous occupations, it is necessary to confirm the *retirement age at 67 years with at least 20 years of contribution*; failing the minimum contributory seniority, the retirement age should be 70/71 years; the same requirements should apply to social allowances and other welfare benefits (excluding disability);

b) *early retirement provided that the person is 64 years old* (indexed to life expectancy), **with at least 37 years of contributions** of which no more than 2 notional years (maternity, compulsory military service and voluntary redemptions or voluntary contributions are not included in the calculation); this introduces a flexibility on exit between 64 and 71 years. The pension should be calculated with the contributory method for contributions running from 1/1/1996 to 31/12/2011 (from 1/1/2012 the pro rata contribution for all post Fornero people is already in force); or *at 42 years for men and 41 years for women* (the 10 months of contributory seniority are abolished) of which no more than 2 years of notional contribution and decoupling contributory seniority from life expectancy; The pension should be calculated by applying the *contributory method* to the seniority of contributions from 1/1/1996 to 31/12/2011, even if from 2021 almost all potential pensioners will be part of the mixed system;

c) provide for mothers to benefit from an earlier application of the requirements set out in points (a) and (b) of 6 to 8 months for each child, up to a maximum of 18 to 24 months;

d) in all cases, up to the age of 70/71, the pension accrued must be equal to ***1,5 times*** the amount of the social allowance;

e) for workers whose pension is calculated entirely by the contributory method, access to the old-age and early old-age benefit is in line with the above rules (the Fornero rules should therefore be abolished, in particular for the requirement that the minimum pension amount be ***2,8 times*** the social allowance, which favours only those pensioners with the highest incomes);

f) enforcement of the Dini Law (No 335/1995) also for workers under a mixed regime; each year of work done before the age of 19 is worth 1,25 years (with 4 years of work, from 16 to 19 years you get a one-year advance).

g) Within 24 months of the approval of a reform law such as the one proposed here, *a consolidation act on pensions* that is easy to read and consult *must be prepared*, organised for each category of worker and repealing, harmonising and simplifying the legislation currently in force[73];

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[72] Take, for example, the social allowance, which has dropped in terms of the number of recipients precisely because of the increase in age requirements: first it was paid at 60 - 55 for women - then at 65 for all, and now at 67.

[73] For a simple question of civility, it would be useful to draw up a simplified Consolidated Act that brings together all pension regulations; the Brambilla Commission set up for this purpose between 2002 and 2008, after having drafted the law establishing the Consolidation Act, has completed about 70% of the work. There are still a few simplifications to be made and the rules from 2008 to the present day which, moreover, as mentioned above, should for the most part be amended.

h) from 2020 - 21, *the indexation of pensions to inflation* should be reintroduced to the extent of 100% up to three times the minimum, 90% from three to five times the minimum and 75% over five times the minimum benefit; this indexation should be applied to the share of the "final salary" pension while for the contributory one, the indexation should be equal to 100%;

i) it would be desirable to *phase out all forms of social security contribution reductions* which, as well as setting a bad example (why invite young people to think about their future by doing regular work and paying social security contributions and then exempting them from contributions?), have proved not to be effective in creating new jobs. Instead of social security contribution reductions, a "tax credit" or a maxi amortisation of labour costs based on the industry 4.0 model is preferable (see next section on employment proposals);

l) *Invalidity pensions* should be certified only by INPS - INAIL Joint Medical Committee; for all those who are certified, the invalidity pension is equal to the minimum pension (currently 513,01 euro);

k) last but not least, serious consideration should be given to the introduction of arrangements to tackle the problem of *low pensions*, i.e. those benefits which, despite being acquired through contributions during working life, do not reach a socially acceptable standard of adequacy. The problem mainly concerns workers who will have their pension calculated entirely with the contributory method (mixed and final salary workers already have integration mechanisms at the end of their career, which are "integration at the minimum allowance" currently amounting to 513.01 euros per month for 13 months' salary or the social surcharge equal to 636 euros per month for 13 months' salary and which could be provided for, with a simple rule that is also equitable between generations, even for pure contributory benefits). In addition to the extension to these workers of the above-mentioned facilities, which however will have to be combined with forms of fiscal control both during and after their working life, other measures could also be envisaged to make the current "social allowance" provided for by the Dini Law more effective and robust and to avoid opportunistic behaviour, which is a weakness of the pension integration mechanisms, through the introduction of a "*minimum pension*", payable at the end of one's career, tied to and sized according to the years of contribution. The so-called "*matching contribution*" systems should also be explored, which, given unintended low contribution levels or no contributions at all, provide for an integration under general taxation during the working career to boost the build-up of the contribution amount and, therefore, of individual pension credit[74]. The latter form of support for low pensions would have the advantage of encouraging the exposure of irregular work. In order to avoid oversupport effects, i.e. to support the incomes of people who during their career have been paid low wages for some time but who on the whole earn pensions beyond the threshold of adequacy, this integration system could also provide for forms of accounting rebalancing of the amount when paying pensions.

6.3 Population trends

a) Immigration - People often say that population trends are already known for at least the next 20 years; actually, as we pointed out in ***Chapter 3***, some fundamental components, including immigration, are still largely to be written. With respect to immigration, it is useful to remember that

[74] In this regard, see Gianni Geroldi, *Pensioni minime e pensioni adeguate. Un nuovo sistema di protezione per prevenire il rischio di povertà*, "Lavoro & Welfare. Per un nuovo riformismo", Roma, n. 2, 2015, pp. 64-97 (also available at https://www.researchgate.net/publication/289539723).

in Italy we do not have any reliable data on the numbers of foreigners living in our country, despite the many databases, including those of the Ministry of Labour, the Ministry of the Interior, INPS and ISTAT. Data are very different between them and even worse, we are not aware of the number of undocumented migrants that, depending on the sources, vary between 500 thousand and one million. Assuming that we foresee a path that in a reasonable number of years will lead to the conclusion of bilateral agreements with a significant number of countries from which migrants come (checks at departure, visas, regularizations, repatriations even in case of crimes), at a certain point ***we will be able to regularize all those who***: i) can prove that they have been working in Italy for 5 years (testimony of employers who will pay, together with the beneficiary of regularization, for example, 6 thousand euros per year with a minimum of 5 for social contributions and unpaid taxes); ii) speak Italian and have knowledge of the constitution and customs of our country (4-month preliminary integration courses). In such a framework, it would be possible to regularize, integrate and welcome over 500,000 people, which would suddenly make the Italian population exceed 61 million, thus significantly reducing average age in Italy. Another option that can be activated at any time in the future to bridge potential gaps between exits and entries into the labour market in order to stabilize and increase the employment rate is the ***opening of selected entry channels*** (including through international calls for tenders with countries that have signed agreements on migration and repatriation) of immigrants for types of work: for example welders, family workers, nurses and so on, as already happens today in some OECD countries. Population trends, according to the forecasting models of EU and international institutions, would change, as would the forecasts for the development and sustainability of pensions and public accounts.

b) Investing in age management measures - Public sentiment towards population change continues to oscillate between removal and dramatization. Instead, a new basic approach needs to be adopted at every level, focusing on the informed choices of citizens and *the ability to generate value in all stages of life*. The question is not so much how long people should or should not be kept at work, but how to develop and make available cultural and operational tools that encourage the possibility of remaining active for a long time and in a satisfactory manner. We need a win-win approach, which starts from what actually works with people in fostering a successful long active life, to move on to what makes companies more competitive (including small and medium-sized ones) by valuing the mature workforce, to then get to what improves the public accounts of the State in an ageing country. Improving employment opportunities at all ages, making use of skills and competences at every stage of life, helps to grow more and better.

Instead, forcing people to stay at work at an older age risks creating imbalances in the labour market between young people and the elderly without producing growth and new opportunities for all. Moving the retirement age forward must therefore be accompanied by age management policies (capable of making the extension of working life positive for people and productive for companies) that are, however, struggling to take off in our country. Over the coming decades, the success of a company, regardless of any new technologies, will depend on its ability to manage its workforce in a far-sighted manner.

c) Development of public and private services for the non-self-sufficient elderly - If the policies for the "seniors" must aim above all at favouring their active role in society and in the labour market, the growing number of the oldest old on the other hand increases public health spending (in particular for long-term care) and the demand for family care. The incidence of over-80s in the EU-27 exceeded

5 per cent during the first decade of the 21st century and this number is set to double by 2050. With regard to Italy, the over-80s were just over half a million in 1951, in the 2011 census they totalled about 3.5 million and are expected to rise to 8 million by the middle of the century. And this is the segment that will grow most in an ageing population. It should also be considered that the increasing number of elderly people tends to be more intense than the progress in reducing the risks of age-related disability, with a consequent significant increase, in absolute terms, in the demand for care for the weak (not self-sufficient) and pre-weak (those who do not feel completely healthy and begin to feel the effects of age-related difficulties).

In places where, as in Italy, intergenerational bonds are traditionally strong and contacts between parents and adult children are frequent, the proportion of elderly people in care institutions (nursing homes) is limited. The low institutionalisation rates of the elderly are a positive aspect, consistent with the importance given to intergenerational solidarity. If, however, one cannot count on adequate support tools (to benefit from while staying in one's own home), caring for parents who are not self-sufficient can become excessively burdensome and limit the possibilities of work/life balance.

According to OECD data, Italy is one of the countries with the highest percentage of adult women who declare that they are not working by choice but because they need to take care of their family members. The main response to the most vulnerable aspect of ageing has been that which has spontaneously been triggered, in the logic of a do-it-yourself welfare, by using the so-called *carers*. *There is therefore a risk that ageing becomes a trap, in the absence of adequate services for the weakest and fastest-growing group*. On the one hand, in order to make the system sustainable in terms of growth and social spending, it is necessary to increase the number of employed people, as a response to the widening and rising of the top of the pyramid of inactive people (and above all of the elderly); this means mobilising above all the female workforce, which until now has been left more at the margins than in other developed countries. But, on the other hand, it is precisely ageing and the resulting growth in demand for care that forces women to stay out of the labour market to take care of their parents in old age. The greater propensity to intergenerational solidarity that characterizes our family model risks being crushed by an excessive burden, with the consequence not only of restricting female employment choices but also of deteriorating the quality of relational well-being. *Care services for the elderly who are not self-sufficient, better regulation of the role of carers and greater use of reversible part-time work could provide useful answers to the needs of families, while at the same time improving their well-being and their contribution to the growth of the country*.

d) **Skills training and human capital development in SMEs** - It is not at all obvious that the population reduction of the new generations in the coming years can, on the one hand, be mechanically compensated by the increase in the automation rate in the production system, and on the other hand, magically decrease the unemployment rate and youth inactivity. If we leave things substantially unchanged, Italy risks, instead, to slide irreparably into a vicious circle of low development, low availability of skilled young people, low innovation, low growth of new job opportunities and low competitive growth of companies. The latest OECD Outlook on skills[75] clearly shows that there is no doubt that the ability of advanced modern societies to successfully seize the opportunities of digital transformation and to positively face the challenges of automation - rather

[75] OECD Skills Outlook 2019. *Thriving in a digital world*, Paris, 9 May 2019.

than suffer the consequences - depends heavily on the skills of the population, starting with the new generations.

The productive fabric composed of small and medium enterprises is often referred to as a limit both with respect to the ability of the country system to invest in research, development and innovation, and to the enhancement of the human capital of the new generations. But this is exactly one of the key questions of how to interpret our growth path in this century, positively putting together what we are today, what we know best how to do by vocation, what we can become with the new generations. The same investment in skills can have little effect, especially in a country like Italy, if it is not accompanied by measures on the organization of work, personnel management and man-machine relations. A large part of Italian companies are in a critical phase of transition, which in the coming years will allow them either to rise to European levels of productivity, export and competitiveness, or to exit the market. In particular, if SMEs want not only to survive today but also to improve their competitive capacity to stay on the market, they can only do so by making the best use of the entry of new generations into the market. Likewise, the possibility of employment and development of young people in the Italian production system is strongly dependent on the opportunities to become protagonists of a qualitative leap forward for SMEs. Finally, precisely because of the growing complexity of a constantly changing reality, it is not only important to test new policy tools for families and companies, but also to plan the measurement of impact from the start on the basis of clear and predefined objectives. Only in this way will it be possible to determine what works and how to take action to achieve even more effective results.

6.4 Employment

If we look at the measures taken in recent years (the last 6 Governments), those concerning labour and employment that have worked best are *Industry 4.0 standards*[76], albeit with hesitation and rethinking, and in part also *Youth Guarantee*, which has guaranteed work experience to a significant percentage of young people taken care of by public and private operators[77].

What, on the other hand, does not seem to be working? The *Citizenship income*, an instrument in which the link between the provision of income and a work placement process is at least weak, connected as it is to the activity of navigators whose nature is not clear yet. It seems likely that these measures will end up in a contribution that is not very conclusive for the purposes of work placement, but which is of entirely welfare nature. Moreover, the constraint of allocation for the Citizenship

[76] *Industry 4.0* Industry 4.0 calls on companies to pursue reskilling and upskilling paths of the current workforce, on workers to continuously update their skills, and on governments to create an environment adapted to these changes. It should also be noted that projections of the employment impacts of new technologies have so far been very contradictory. The *2016 Report on the Future of Work in Industry 4.0* estimated that 5.1 million jobs would be lost by 2020 due to the digital transformation of the labour market. The 2018 edition of the same Report, *The future of jobs "World Economic Forum"*, forecasts that 58 million jobs will be lost by 2022. So the most recent opinions of those who study these problems are that *"it is not possible to predict, in exact numbers, the jobs that are created or destroyed. Industry 4.0 is still a world to be discovered and developed, with many variables*."

[77] According to the ANPAL newsletter, at the end of June 2019 there were almost 1.5 million young people registered with the Youth Guarantee Programme. 58.5% of the young people covered by the services were initiated into active policy intervention. Among the actions, 56.8% are represented by extracurricular traineeships, 25.3% by employment incentives, 12.6% by training courses. On completion of the active policy interventions, again at the end of June 2019, more than 351,000 young people (i.e. 55.5%) were employed. Job placement rates at 1, 3, 6 months after the conclusion of the intervention went from 45.5% (1 month) to 53.6% (6 months). At the end of the process, the first entry into the labour market reached 44.5% within the following month and 60.8% within 6 months.

Income Relocation Cheque has substantially cancelled out the only effective instrument of active labour policies applicable all over Italy.

The *Dignity Decree* has not led to increases in employment: the total number of employees has been substantially stable since 2018, the incentive to open-ended contracts has worked in the sense that it has led to the conversion of existing fixed-term contracts, but has not produced new employment if not in the form of new fixed-term contracts that, although decreased compared to the years of the crisis, grow even more, in percentage, than stable ones. Moreover, for the past three quarters, the inactivity rate (people who do not work and do not seek employment) has been stable at around 33% and has not decreased. Finally, it should be noted that none of ANPAL's institutional objectives has had visible results, from the architecture of information systems designed to facilitate the matching of supply and demand to the definition of the proactive role of navigators.

Dos:

a) First of all, to work on the system of *employment incentives*: the temporary contribution reduction, which began with the Jobs Act and continued with the Dignity Decree, produces unstable results[78]. As the INPS 2018 Report shows, 54% of open-ended contracts are terminated (mostly by resignation) within 36 months; but 50% of permanent "incentive" contracts also have the same outcome. The cause, however, is not the expiry of the contribution benefit: upon expiry of the incentive there was only a 15% increase in terminations (Source: INPS), the majority of which was instead initiated by employees. Two remarks can be made in this regard: first, despite constant rhetoric, the so-called stable contract is no longer perceived as a key value, at least by older workers; second, the benefit of labour costs for the company (commonly referred to as contribution reduction) is of little interest to workers. It would be better to adopt other measures. Given that the tax and contribution wedge, at least for wages up to 35 thousand euros (i.e. more than 70% of taxpayers) is not a problem (see the appendix), the so-called "maxi amortization" of labour costs could be much more effective, based on the Industry 4.0 model instead of the contribution reduction that often pays for shell or insolvent companies, thus creating only unstable employment. For all newly hired employees under 29 years of age and for all unemployed people over 58, a maxi amortisation of the labour cost equal to 130% for the first year could be implemented, which is reduced to 100% at the end of the sixth year with a 5% annual deduction (workers can benefit only once from this facility, which can be used in whole or in part also with different recruitments- dowry).

b) Secondly, to act on the *matching system*, standardising public operators (Employment Centres) and accredited private operators (Employment Agencies) throughout the country and allocating a "***dowry***" for every citizen who wants to start a job placement process, to be paid to the operator in part for the services provided and in part for the positive outcome (placement). Networking the more than 500 Inps branches, the 100 Inail branches, the as many branches of Confindustria, Confcommercio, Confartigianato, Confagricoltura, Coldiretti and other trade associations (in total more than 1,500 branches) connected with businesses, employment centres, employment agencies,

[78] If you look at the "National Directory of ANPAL incentives" you can see that there are 18 types of contribution reduction at national level plus regional and provincial ones. Except for the "bonuses" paid for the beginning of work experience and training courses for young people, the entire current incentive system is based on contribution reductions. As already indicated, even the total contribution reduction for the South, which lasted from 1970 to 1995, did not create any jobs or development and when it ended a part of the employment was lost and recovered after 5 years despite being subject to full contribution.

trade union leaders and so on, would allow a matching between supply and demand which can be accessed automatically by anyone with smartphones, tablets, PCs, etc. In addition, the *"General Register of Active Workers"* is available at INPS, which, in addition to the monthly statistical information on job changes over the month, the number of illnesses, permits, accidents, hours worked, can constitute a "backbone" in which each worker or potential worker can enter their "personal file".

c) Thirdly, to work on the *apprenticeship system*: the second (professionalizing) level is used, except for the strictly craft enterprises linked to traditional or specialized work, simply to reduce labour costs. In the context of a general cut in the tax-contribution wedge, most spending on this item could be recouped, by funding only actual training for specific processes. The resources could be allocated to first-level (i.e. for the attainment of the diploma following the school-business training course) or second-level (i.e. for the attainment of the degree or master's degree in university-business) apprenticeships.

d) Through *public and private investment in research and innovation*, especially in the biomedical sciences, pharmaceuticals, nanotechnologies and ICTs, as provided for in the EU's five objectives, the overall employment rate for women could be increased in particular and the unemployment rate for the under-29s reduced to less than 15%. Improving employment also requires action on the *contribution burden* (at least for new *self-employed workers* - see ***appendix 1***) and on the tax side for employees under 29, over 56/58, and working on income brackets and the conflict of interests. In brief: i) a limit to the opening of new independent craft businesses, commercial activities and services in the broad sense is mainly due to the so-called "minimum contribution" which provides for the payment of about 23.55% on a minimum income, and which for 2018 is worth about € 3,800 per year in addition to VAT and sundry charges. It is clear that for a young person who starts a business to have a certain disbursement of about 4 thousand euros becomes unacceptable, but there are also taxes, so you might think that for the first 6 years of business the contribution will have to be calculated the following year on the actual annual income (deducting start-up and investment costs) with the possibility of three-year deferrals and benefiting from a tax credit equal to 20% of taxable income for the first year, which is reduced to 5% for the sixth year. ii) a school-work connection where it would be necessary to increase the number of specialization schools, with adequate information addressed to students and parents during courses as a useful and rapid access point to work; today companies lack more than 70,000 skilled workers and about 300,000 artisans and traders; as well as agricultural policies with tax benefits for those who, as farmers, protect the territory.[79]

e) Rethinking the organization of work, which has been on hold in our country for more than 20 years, given the increase in retirement age; a policeman cannot stay out in the field from the time he joins the police at the age of 24 to 65; in other countries, after 50 the organization provides that the subject gradually moves to tasks of intelligence, then paperwork and finally retirement. The same for sportspeople and dancers and so on. Over the years, one can be more useful by transferring experiences and skills, also losing part of the accessory salary in order to stay competitive with the newcomers.

[79] By 2045 the retirement age will be about 70 years and through a good struggle against "educational and social poverty" with the mandatory introduction of 3 hours per week for civic, health, food education, etc.. and strict prohibitions against drugs including soft drugs (recreational use of drugs not even to be taken into account), at 70 years one should be in good health considering also the tremendous progress of medicine (transplants, nanotechnologies, etc.).

f) Redesigning active ageing through new work paths or social initiatives such as voluntary work in community centres in housing estates for young couples and the elderly, with rents and expenses for acceptable general services also carried out through social housing; socially useful work, food collection from shops, adoptive grandparents, etc. With these initiatives, mature workers would obtain much higher economic benefits than allowances and welfare payments on retirement, suffer less loneliness and mutually guarantee more solidarity. Designing forms of active ageing from 67 to 75 years with social jobs paid for in services (meal vouchers, cinema and theatre cards, transport, etc.), through a national active ageing plan.

g) Development of redundancy and solidarity funds to encourage outgoing flexibility and generational turnover[80] - This is a negotiating model, with no costs for the State but borne by the social security system of the sector to which it belongs, and is carried out within the framework of the collective agreement in which a possible sharing of the costs between employer and employees can be determined. The only burden to be borne by the public is of a regulatory nature: that is, to allow the payment of contributions in favour of workers who are no longer in business. These Funds can activate the "extraordinary allowances" agreed upon by means of company or territorial agreements to accompany permanent workers to retirement, who will meet the personal and/or social security requirements within 5 years from the date of termination of employment. The amount of the allowance is approximately equal to the pension once the requirements have been met, including contributions to cover the missing period. It would be worth exporting this model, also given its success compared to other attempts to encourage early exit from work, from APE to part-time work for older workers. However, we must not be deceived about two related issues. First, that this could be a tool to encourage turnover, and therefore the recruitment of young people: all the experiences aimed at this target, even those financed with public resources, have failed. No company will automatically replace an outgoing worker, let alone if you try to force it. Secondly, that it can be an expansionary tool: it will be used especially by companies that anticipate a complicated future and will need it to address the problem of redundancies by avoiding drama. However, since it is a contractual instrument and therefore flexible and viable, it is definitely possible that in certain situations it can also become a driving force for the renewal of human capital in relation to production developments.

h) ***Contrast of interest***[81]- The latter measure should reduce irregular work by more than 1 million workers, which alone would increase the employment rate considerably, precisely because of the

[80] The bilateral and/or solidarity funds, under different names and with different missions, are spread throughout the labour market, at least in the private sector. Under the Jobs Act, the introduction of Solidarity Funds, the administrative management of which can be delegated to INPS, has been envisaged for those sectors that do not have ordinary social safety nets (essentially the Cassa Integrazione). In some sectors, bilateral funds (or even bodies) have already existed for a long time for various purposes, including income support. The Fondi di solidarietà del Credito, Assicurazioni, Poste, FFSS, established by Legislative Decree 148/2015, gather the many years of experience especially of the Fondo Esuberi (Redundancy Fund) in the banking sector, which has allowed, through the sharing of costs, to deal with the thousands of redundancies with a sort of early retirement (the so-called '*scivolo*', i.e. retirement incentive) to be borne by the Fund.

[81] It concerns the possibility of deducting all expenses that families incur directly and without intermediaries for the maintenance of the house, vehicles and small domestic services. Generally, a maintenance or a cost of 1,000 euros, if invoiced with VAT becomes 1,220; in 9 cases out of 10 the invoice is not required because it is not deductible or detracted from income, so people prefer to pay off the books by accepting the discount proposed by the service provider, which generally is around 10/15% of the cost of service. It could therefore be envisaged that for an experimental period of 3 years all households could deduct from their annual taxes 50% of the expenses effected with a regular electronic invoice (cross-checking of the provider/user tax codes) up to a limit of 5.000€ per year for a 3-member household, which increases by 500€ for each additional member. The works/services that can be deducted should be: maintenance of the house

identification of large groups of workers who are currently unknown to the tax authorities and who are considered, for statistical purposes, to be inactive, often even subsidised by means of welfare benefits such as housing or other services provided by local authorities.

i) To improve the tax deductibility of households by implementing a single deductibility ceiling[82] that includes all forms of complementary welfare (pension funds, health care, LTC and life insurance). The development of corporate welfare and the rationalization of the approximately 500 forms of income deduction constitute a real tax reform (in contrast to both the flat tax and the 80-euro bonus) with the aim of improving contribution and tax revenues by approximately 10% and thus making the social protection system more sustainable.

l) Income from work - The request for a reduction in the tax and contribution wedge, also interpreted as the difference between the ***net payroll and the cost incurred by the company***, has now become a much discussed issue that is always resolved with the proposal to reduce taxes, i.e. the PIT that weighs on incomes and wages of individuals. But perhaps the solution is not so simple because you always have to ask yourself, given the tax returns, who will then pay for health care, school, government of

(plumbing, electrical works, construction, upholstery, furniture), maintenance of cars, motorcycles and bicycles, minor domestic help (for just a few hours a week which is complicated to regularise); this amounts to 2,500 euro a year that is deducted from taxes or, in the event of inability to pay tax, is discounted by the services that the family needs (health care services, crèches, canteens, transport and so on). If a family deducts something, it means that the supplier pays the equivalent taxes if not more, but above all they pay social security contributions and VAT. But even more important: off-the-book creates more off-the-book, underground activities generate other underground activities; the invoiced services generate more invoicing (if not, the service provider will lose money) but, above all, this reverses the perverse Italian cycle of evasion-elusions, moving it along the path of ***fiscal loyalty*** (not out of love but out of necessity). Results: 1) A family, regardless of income, will save €2,500 in PIT (it's like paying for work, including VAT, at 50%, which is good competition for irregular workers), which is equivalent to a fourteenth month's salary that for incomes up to €35,000 (the bulk of taxpayers as shown by the 6th Survey on income tax returns for 2017 PIT purposes by Itinerari Previdenziali) represents a 50% reduction in the tax wedge. 2) The irregular ones, very common in our country, are drastically reduced; a "virtuous circle" begins and the chain that off-the-book creates more off-the-book is broken; this is perhaps the greatest achievement of the whole process: legality is reaffirmed. 3) The State does not get a stellar gain even if revenues improve by at least 15%, which, out of VAT evasion (evaded for 9 invoices out of 10), contributions and taxes equal to about 160 billion, is still worth 24 billion. With this real 14th monthly salary which is not financed by the State, the beneficiary family who has been given all the necessary tax receipts could, for example, start a supplementary healthcare scheme. In 2017, households spent more than 33 billion euros on health care out of their own pockets. When you are sick, you don't really care if the examination costs 100 or 200 euros or if the doctor issues a bill or not; you just pay. However, a specialist examination which, under an agreement with a health fund or health insurance fund, costs 80 euros, can cost private individuals up to 200 euros. This is to make it clear that if a family invests a part of its " fourteenth " monthly salary in a health care fund they save money in the time of need, avoid long waiting times, choose the best facilities and save tax: in fact, the registration fee to the health care fund benefits from " tax deductibility ", which for a family with a 33% tax rate means additional savings. The contrast of interests, unlike the flat tax, allows all deductibility and detraction, including those that are essential for complementary welfare and for corporate welfare, which can be worth up to 4,500 euros per year. A single deductibility ceiling of 9,000 euros per year would be a great help to families and would encourage consumption, development and employment.

[82] In Italy, the following tax benefits are available: €5,164.57 for payments to pension funds, €3,615.20 for supplementary health care and about €550 for other forms of welfare (nursery, camps, scholarships, etc..). If, instead of having these deductibles aimed only at social security or health care, each family could have a "ceiling" of €9,000 per year for ***all forms of welfare*** to be used according to the needs and situations in which they find themselves, it would be a significant step forward in helping them and would promote consumption, development and employment. To put it briefly, if you spend 5,000 euros a year on complementary welfare, at a rate of 33% you will save 1,650 euros that you can invest in a supplementary health care fund and at the same tax rate, and you will still save 33% (the investment in the health fund will cost 1,650 euros - 33%, or 1,105 euros). But not only that: since a family could schedule two specialist examinations in a year, they would pay nothing if they had been covered by the health fund, while without the fund they would have incurred a cost of at least 250/300 €; a saving that is added to the 545 € of tax deductibility. Little is needed to generate a virtuous circle that is beneficial for households and for the State.

Italy and so on. First of all, let's see how much Italians pay for PIT. 1) Out of *41.2 million* taxpayers[83], the employed workers are *20.93 million*, that is, 50.8% and they pay, net of the 8- euro bonus (which is worth 9.55 billion per year), *77.156 billion* out of a total of 155.15 billion (equal to 49.7%). With incomes from zero to 7,500 € we have 4.12 million employees who have a *negative PIT*; in the second bracket, i.e. those who report between 7,500 and 15,000 euros, are 4.15 million and these, because of deductions, reductions and bonuses, also have a negative tax. Basically, 8.27 million, or 40%, do not pay PIT. It should be noted that for each taxpayer there are *1.468 inhabitants* (the Italian population exceeds 60 million) whose contributions are generally borne by the taxpayer. Those who report between 15 and 20 thousand euros are almost 3 million and pay an average PIT of 1,237 euros, which, with about half a person dependent (of course this is an average, actually ranging from singles to larger families), becomes 843 euros, with two dependants (wife and child) for health care alone this family would cost the State 5,634.48 euros (1,878.16 euros per capita), a family quotient *ante litteram* against a paid tax of 1,237 euros. But one might argue, this family also pays indirect taxes and excise duties: indeed, however, on the basis of the median income they would be equivalent to no more than 2,000 euros, and therefore still insufficient to pay for health care alone. Is it right to reduce the PIT for these workers? And who will pay for them? The next income bracket (between 20 and 35 thousand euros) is the largest with over 7.26 million who pay an average PIT of about 4,000 euros, while that from 35 to 55 (the maximum limit declared by the policy not to "favour the rich") exceeds 10,700 euros.

And then, as shown in the table, there are the 770,000 (3.73%) who report more than 55,000 euros and who pay 34.67% of all PIT and an even higher percentage of indirect taxes. From 35,000 euros in reported income upwards the PIT ranges from 10,000 euros to over 283,000; the tax paid by each taxpayer reporting over 300,000 euros in income is equivalent to that of as many as 229 *workers in the range of 15 to 20,000 euros*, while it is impossible to compare it with incomes between 7,500 and 15,000 euros which even pay negative taxes; between 100,000 and 200,000 (100,000 gross is less than 53,000 euros net) 40 times that amount is paid. From this first screening it is evident that by imposing a *flat tax* on the first, 8.27 million employees would not benefit from it because they pay a negative tax, nor would the next 3 million because they have an average tax of less than 15%; the only beneficiaries are the 7.25 million employees between 20 and 35 thousand euros of reported income, who, having an average rate of 18.7%, would save 3.7% and 1.6 million employees between 35 and 55 thousand euros, who today have an average rate of 25% and would save a lot. The cost of the operation is no less than 20 billion euro deducted from the financing of the Italian welfare system, which already absorbs all direct taxes. The same considerations apply to the self-employed. Reducing the tax wedge is therefore very difficult both for the costs and because it is unfair and inequitable because it is possible to obtain services from the State without any compensation by passing on these costs to others; one of the possible ways could be the afore-mentioned "contrast of interests" which improves tax revenues by more than 10% and makes the millions who do not pay taxes have to pay them. 2) Now let's have a look at the *contribution wedge*. For example: a worker with an income of up to 25,000 euros receives 100 in his pay check, pays about 9.2% in contributions and about 15% PIT (with average deductions and deductions) on the remaining 90.8%; he has 77.18 euros left. To the employer this worker costs about 130 because of the social security contributions paid to INPS

[83] Data processed by Itinerari Previdenziali in the 6th Survey on tax returns for 2017 PIT purposes (available at www.itinerariprevidenziali.it).

(23.8), for temporary benefits to INPS (sickness, maternity, unemployment, etc..) and INAIL for insurance against accidents. The difference between net and company cost is equivalent to 1.67 times. First question: can this contribution wedge be reduced? Answer: no! If you want to reduce social security contributions, apart from the loss of revenue for the initial period, you have to inform the worker that their future pension will no longer be equal to 72% of their final income but lower as a result of the reduction in contributions; feasible? No! Second question: can we curtail the great social achievements that guarantee a salary if one falls ill or becomes unfit or disabled or unemployed? No, therefore, even the contributions for temporary benefits and INAIL cannot be reduced. The shortcoming of this mantra of the tax and social security wedge is all here; you cannot reduce your pension just as you cannot reduce your social benefits. 3) But since the difference between the net payroll and the company cost is *2.2 times*, let's see where this money goes. For example, the contract for trade and services; for every hour worked it is necessary to charge the costs of some "institutions" (to use union jargon) from which workers benefit, which are: the 13th and 14th month's salary, the performance bonus provided for in local or company contracts (about half a month's salary), the severance pay (in practice one month's salary), holidays and festivities (between 21 and 27 working days and therefore more than a month); to these we must add the costs for joining the fund for supplementary health care and for the pension fund. In total, our 1.67 times increases to 2.2 times. It is even clear that with regard to this *third aspect*, it is impossible to reduce the cost of labour, i.e. the difference between what the worker receives in his pay check and what they cost the company, because except for the PIT, everything else goes to the benefit of the worker, either directly (the money from the 13th and 14th month, the severance pay, the performance bonus) or indirectly (pension fund, health care, contributions to INPS, social security and so on).

But also the PIT goes to the benefit of the worker and their family, if only to pay for health care, school, etc. It would be a useful educational proposal to tell all taxpayers how much they paid in the year and how much they received in services; one would realize that the mantra of lowering taxes is perhaps relevant to less than 30% of the population, who pay them for all but that the Government excludes from any benefit.

Table 6.1 Income tax returns for 2018 personal income tax, relating to employees, tax year 2017

Classes of total income in euro	Number of taxpayers	Bonus due			Amount net of bonus			Average in € per citizen
		Number of taxpayers	Bonus amount in thousands of €	Average bonus in thousands of €	Average bonus in thousands of €	% of total	Average in € per taxpayer	
zero or lower	0	7.458	5.455	0,73	**-5.455**	**-0,01%**	**0**	**0**
from 0 to 7,500	4.120.656	1.022.598	350.037	0,34	**-37.609**	**-0,05%**	**-9**	**-6**
up to 7,500 including negatives	4.120.656	1.030.056	355.492	0,35	**-43.064**	**-0,06%**	**-10**	**-7**
from 7,500 to 15,000	4.149.617	3.690.711	3.141.228	0,85	**-189.352**	**-0,25%**	**-46**	**-31**
from 15,000 to 20,000	2.991.578	2.870.139	2.665.386	0,93	3.700.114	4,80%	1.237	843
from 20,000 to 35,000	7.257.792	4.123.767	3.387.126	0,82	29.435.146	38,15%	4.056	2.763
from 35,000 to 55,000	1.628.735	0	0	0,00	17.502.499	22,68%	10.746	7.322
from 55,000 to 100,000	606.278	0	0	0,00	13.877.393	17,99%	22.889	15.596
from 100,000 to 200,000	141.560	0	0	0,00	7.053.595	9,14%	**49.828**	**33.951**
from 200,000 to 300,000	19.439	0	0	0,00	1.914.295	2,48%	**98.477**	**67.098**
above 300,000	13.780	0	0	0,00	3.906.227	5,06%	**283.471**	**193.146**
TOTAL	**20.929.435**	11.714.673	9.549.232	0,82	77.156.853	100,00%		
39.52% OF CITIZENS DO NOT PAY TAXES								
14.29% OF CITIZENS PAY 4.80% OF TAXES €843 PER CAPITA, WHICH ARE INSUFFICIENT FOR HEALTH COSTS								
46.19% OF CITIZENS PAY 95.51% OF TAXES			0.84% OF CITIZENS PAY 16.69% OF TAXES					
11.51% OF CITIZENS PAY 57.36% OF TAXES			0.16% OF CITIZENS PAY 7.54% OF TAXES					
3.73% OF CITIZENS PAY 34.67% OF TAXES			0.07% OF CITIZENS PAY 5.06% OF TAXES					
Data processed by Itinerari Previdenziali based on MEF data, Tax Agency: as updated on 30 May 2019								

As we have seen in the first part of the discussion on the difference between net payroll and business cost for each worker, it is difficult and sometimes impossible to intervene on the three components of labour cost, *taxation, contributions and other components of gross annual salary (RAL)*, except for income over 45 thousand euros, but only for the tax component, by remodelling the rates. We know, however, that income from work in our country, following the 1993 Ciampi agreement and the July 2003 Berlusconi agreement, have not benefited from an appropriate revaluation except through the accessory institutions to the basic salary. So how can we increase the incomes of employees, self-employed workers and freelancers? First, by allowing all workers to benefit from the so-called "*contrast of interests*", which can provide a solution to all these issues without causing loss of revenue for the Treasury. In addition to the contrast of interests, given the already important deductions currently provided for, such as €5,164 for supplementary pensions, €3,615.20 for supplementary health care and tax rebates provided by the TUIR for insurance premiums and benefits and LTC, one could think of introducing a virtuous "single household ceiling" of about €9,000 per year that can be used, according to family needs, in its many functions; the State, with these forms of supplementary and voluntary welfare, is saving money and making services more efficient. Then there may be other measures in favour of different categories; let's name some: **1)** *Youth entrepreneurship*. In order to encourage growth in the *craft, trade, tourism, services and new start-ups sectors*, one could: a) abolish the minimum contribution for the registration of new VAT numbers; social contributions will be paid the following year to the INPS or to another body while, for individuals up to the age of 32, people who have been unemployed for more than one year, women over 47 and men over 55, the contribution will be reduced by 70% for the first 3 years and by 50% for the next 2 years as from the opening of the business, with the option, for the future, of voluntarily paying in what has not been paid; b) VAT reduced by 50% through state contribution; c) for the first 5 years the deductibility of start-up costs is annual, per cash and not by amortisation, and the costs are estimated at 130% (like Industry 4.0); same amortization, also for five years for personnel costs. **2**) *Agriculture*. To encourage and promote the protection of the territory against neglect, lack of maintenance of forests, watercourses, hilly and mountainous areas, farmers, by means of a monitoring agreement with the State, regional governments and mountain communities, in exchange for the maintenance of the land given to the farmer or their property, annual social security contributions are paid in proportion to the reported income. **3**) *Employees*: extension of company welfare and performance bonuses through simplified and multi-subject direct agreements between the employers and workers concerned up to a maximum of 10% of the RAL with a 5,000-euro threshold; increase in meal vouchers from 5.16 to 10 euro per day; introduction of the transport voucher for a maximum tax-free amount of 1,200 euro per year. With respect to scenarios such as the flat tax (which is a genuine driver of underground and irregular work) or reductions in rates that still generate social inequities (see the flat tax for VAT up to 65 thousand euros), these proposals represent a real investment for the state leading to higher employment, more consumption, protection of the territory with huge savings on costs after disasters. For employees, this would imply an increase by over 3,000 euros net, in addition to the contrast of interests (2,500 euros) and company welfare; the same increases are envisaged for other categories.

Table 6.2 - All types of taxpayers: gross and net rates of the bonus

Classes of total income in euro	Number of taxpayers	Comprehensive income			Net tax				Net tax with bonus			
		Frequency	Amount	Average	Frequency	Amount	Average	G/D average rate	Frequency	Amount	Average	K/D average rate
up to 10,000	13.020.846	12.364.480	43.159.798	3,49	3.918.800	1.363.012	0,35	3,16%	3.918.800	77.802	0,02	0,18%
from 10,000 to 20,000	11.407.078	11.407.078	171.827.677	15,06	10.173.530	17.340.995	1,70	10,09%	10.173.530	12.464.099	1,23	7,25%
from 20,000 to 29,000	8.644.458	8.644.458	207.533.332	24,01	8.488.963	32.185.553	3,79	15,51%	8.488.963	28.798.427	3,39	13,88%
from 29,000 to 40,000	4.516.081	4.516.081	151.216.779	33,48	4.483.787	30.034.605	6,70	19,86%	4.483.787	30.034.605	6,70	19,86%
from 40,000 to 50,000	1.815.320	1.815.320	83.482.417	45,99	1.806.161	19.924.222	11,03	23,87%	1.806.161	19.924.222	11,03	23,87%
from 50,000 to 55,000	869.301	869.301	55.360.132	63,68	865.973	15.023.366	17,35	27,14%	865.973	15.023.366	17,35	27,14%
from 55,000 to 100,000	470.810	470.810	40.252.033	85,50	469.468	11.902.654	25,35	29,57%	469.468	11.902.654	25,35	29,57%
from 100,000 to 200,000	375.154	375.154	49.229.452	131,22	374.100	15.991.403	42,75	32,48%	374.100	15.991.403	42,75	32,48%
from 200,000 to 300,000	53.997	53.997	12.890.393	238,72	53.857	4.599.307	85,40	35,68%	53.857	4.599.307	85,40	35,68%
over 300,000	38.291	38.291	23.274.026	607,82	38.227	9.150.922	239,38	39,32%	38.227	9.150.922	239,38	39,32%
TOTAL	**41.211.336**	**40.554.970**	**838.226.039**	**20,67**	**30.672.866**	**157.516.039**	**5,14**	**18,79%**	**30.672.866**	**147.966.807**	**4,82**	**17,65%**
Amount and average in thousands of euro												

Note: The letter D indicates the average income and the letters G and K indicate the amount of net tax paid and the amount of net tax with bonus, respectively.

To conclude

At this point, the many proposals, far from generic, presented in great detail, make us understand the complexity of the work that economic policies have to face in the next ten years, if we want the RGS projections of gradual exit from stagnant growth towards the end of the next decade to come true. Their success implies a convergence on the basic objectives on the part of all the political forces that might alternatively take part in the government during the indicated period, even if the paths and their patterns might differ, depending on the majority groups that might emerge.

These measures would push, on the one hand, for the use of all the productive capacity currently unused (unemployment, first of all) and, on the other hand, for the growth of productive capacity (potential product).

However, in a context where there will be a reduction in the number of available jobs (hence the need for policies that allow their full use) and an increase in the number of people who will not be at work, the increase in production capacity can only take place through an increase in systemic labour productivity. This will be the only way to defend the current welfare level.

But that is not all, even other basic conditions will have to be met for that objective to be achieved. In particular, these are related to the international context, on which we can only act in part. It will be difficult to counteract the ever closer approach to the technological frontier of countries that are still considered as emerging economies but whose human capital is already qualitatively superior to ours. Some of the measures indicated here aim to support our positions on the international technological level, but in order to effectively challenge both trade wars and international competition we must also reinforce our European identity. In this way, the medium-term path that the measures outlined here have attempted to describe will become more credible and their implementation will be compatible with a slow reduction in the public debt/GDP ratio.