Policy Recommendations Report

MOSPI – MODERNIZING SOCIAL PROTECTION SYSTEMS IN ITALY
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POLICY RECOMMENDATIONS REPORT

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Introduction

The present Policy Recommendations Report, last deliverable of the MOSPI project, is focused on testing a set of policy recommendations for reforming the social protection system and aimed at addressing inequalities in the context of a changing world of work.

In the first section, in continuity with what was presented in the first MOSPI report titled "Background report on future of work scenario. The dynamics of non-standard work in Italy"[1], we explore the characteristics of fragile workers in the Italian labour market, reflecting on the experience of the Covid-19 crisis, and we dedicate specific attention to platform workers.

In the second section, we present a package of two policy proposals to address the limited coverage of unemployment benefits in Italy. We first propose to extend the NASpI (standard unemployment insurance for employees) to 'parasubordinate' (*co. co.co.*) workers, hence abolishing the Dis-COLL (*ad hoc* unemployment insurance for parasubordinate workers). This should broaden the coverage of the system by easing access requirements and by increasing benefit duration. Secondly and most importantly, we build on the recent experience of the ISCRO (a newly introduced allowance for selected self-employed workers), we propose to expand it to all self-employed workers and to associate the payment of figurative contributions to unemployment spells covered by the 'ISCRO 2.0', as is the case for the NASpI.

In the third section, we propose the introduction of a 'guaranteed' pension for NDC workers, where the policy maker sets to relieve workers of a portion of the risk of underperformance of individual careers and/or of the country's economic growth.

In section four, we present results for the two policy options combined, in order to assess the overall impact of the proposed strategy.

All policy scenarios are compared to a new and improved baseline scenario. T-DYMM 3.1 (compared to the 3.0 version presented in the Analysis Report) incorporates an improved set of estimates for the labour market, imputes a take-up rate on unem-

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[1] For details on previous MOSPI reports, visit: <https://bit.ly/3EKfssf>.

ployment benefits and minimum income schemes according to historical data and introduces a choice function for the retirement process[2].

Like most microsimulation models, T-DYMM does not include a behavioural response from agents, thus all policy proposals are tested under the assumption that supply of work and tax compliance behaviours are not affected by our policy proposals. Therefore, our evaluation focuses on equality rather than efficiency. We are however conscious of the importance that the proposed packages be implemented with attention to incentive/disincentive mechanisms on the supply side of the labour market. Lastly, a few caveats should be reminded to the reader when interpreting model results: i) T-DYMM simulations are based on the EU-SILC survey for Italy for 2016 linked with administrative information from INPS and the Department of Finance and statistically matched to data from the Bank of Italy's SHIW survey. The obtained dataset is weighted to account for a number of dimensions to make it representative of the Italian population[3]. Despite our calibration, the original sample is still relatively small (48,189 individuals in the base year), hence, representativeness for smaller groups cannot be guaranteed. Because our weighted sample is also relatively small (238,975 individuals in the base year), scatter plots can look noisy, and for that reason in this report they are often shown together with interpolation lines; ii) T-DYMM employs a discrete (annual) notion of time[4]; iii) While the present version of T-DYMM simulates migration, for migrant workers who receive their pensions in Italy we do not simulate pension benefits originating from periods of work spent abroad, therefore total benefits for immigrants are bound to be underestimated; iv) While most of the Italian tax-benefit and pension system is simulated in T-DYMM, not all institutes could be included[5]; v) T-DYMM only takes into account what happens in the formal economy, no estimate for the informal economy is included; vi) Macroeconomic and demographic assumptions are aligned to those underlying the 2021 Ageing Report from the European Commission.

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[2] The choice function introduced is based on an option value model (Stock J.H., Wise D.A., 1990, Pensions, the option value of work, and retirement, *Econometrica*, 58, n.5, pp.1151-1180). We took inspiration from the paper by van Sonsbeek (van Sonsbeek J.M., 2011, Micro simulations on the effects of ageing-related policy measures: The Social Affairs Department of the Netherlands Ageing and Pensions Model, *International Journal of Microsimulation*, 4, n.1, pp.72-99) and use the parameters estimated for Italy by Belloni and Alessie (Belloni M., Alessie R., 2013, Retirement choices in Italy: What an option value model tells us, *Oxford Bulletin of Economics and Statistics*, 75, n.4, pp.499-527). Results are not largely impacted by the introduction of the choice function, even though a large portion of those who are eligible decide to postpone retirement. Possible future developments would include the estimation of the parameters of the option value model for Italy using the AD-SILC dataset.

[3] For an in-depth illustration of the reweighting technique applied, see T-DYMM 3.0 Forecast Model Report (section 7.2.2) and the Analysis Report (section 1.1), both available at: <https://bit.ly/3DEiZqR>.

[4] Amongst other shortcomings of this assumption, because retirement age requisites are updated on an annual basis, the subsequent approximation produces a strong contraction of the number of new retirees upon the update of said requirements. Some statistics are therefore not apt to being checked on an annual basis, but should rather be explored in multi-annual periods.

[5] We do not simulate taxation on corporate income, on real wealth and local taxation. On the benefit side, we do not simulate allowances paid out at the local level.

1. Future of work: challenges for the Italian Labour Market

1.1 'Fragile' workers

'Fragile' work – and the 'fragilization' of work – have become one of the main topics in the debate on modern economic changes. It has been described using several alternative terms, including 'non-standard', 'discontinuous', 'informal, 'insecure', and 'precarious'. For many individuals, work is becoming more insecure and poorly paid; moreover, workers are becoming more vulnerable to changes in their employment status, income, and insurance and employee benefits coverage.

Most scholars agree that fragile work is accompanied by discontinuous job careers. The 2008 economic crisis and the Covid-19 emergency has profoundly changed the Italian job market. Upon emersion from the recession phase, the recovery that was consolidating before the Covid-19 pandemic was employment-intensive, especially regarding a certain type of work, which is difficult to bring back to standard work (Filippi *et al.* 2021). Today, work appears much more discontinuous than in the past, with periods of employment – most often less than a year – alternating with periods of inactivity or unemployment.

If the trends of contracts are examined according to their duration (figure 1.1), those of very short duration constitute a significant share and, except for 2015, show no sign of decreasing. In March 2019, fixed-term activations with a duration of less than a week amounted for approximately 29% of total fixed-term activations. Job contracts with a duration of between one week and one month, though less represented, appear to be constantly increasing (from about 50,000 to more than 80,000). The activation of job contracts with a duration of up to six months resumed growing more evidently as of the second half of 2016. The trend of relationships with a duration of more than six months shows strong seasonality in September and January but remains substantially constant until the end of 2015, when the series begins to grow more evidently.

Figure 1.1   Fixed-term contracts by duration (seasonally adjusted series)
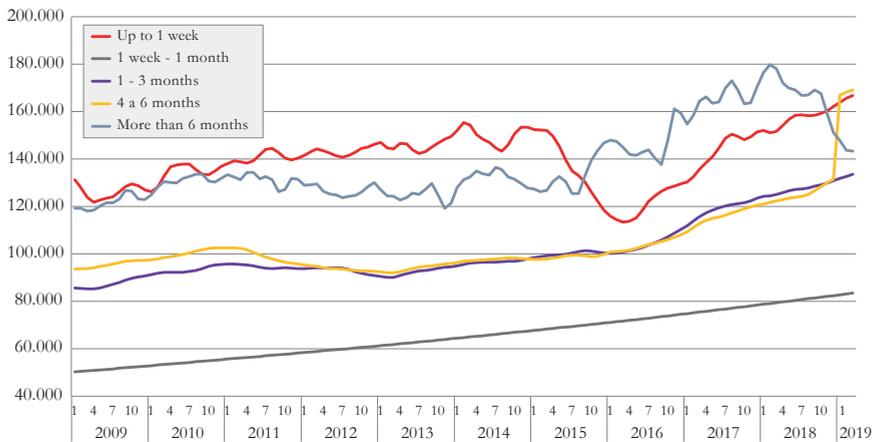
Source: INAPP elaborations on data from the Italian Ministry of Labor and Social Policies (SISCO-COB)

In response to the crisis, the 2000s saw most European countries introduce substantial changes in the labour market, thus essentially directing it towards more flexible employment contracts (Parello 2011). In this context, the use of temporary work can be interpreted not so much as a short-term response to economic crises, but as a precise strategy favoured by the increase in competition between companies, changes in the organizational practices of companies and changes and gaps in labour regulation (ILO 2016). Recent empirical evidence shows that, in the Italian labour market, the demand for work has increasingly turned to contracts involving relationships other than standard full-time and/or permanent work: in fact, the incidence of fixed-term contracts has increased. These contracts appear episodic and fragmented and lack a systematic temporal frequency. At the same time, the numerous legislative changes with respect to fixed-term work have generated continuous transfers of workers from one contractual form to another.

In addition to fixed-term workers, the self-employed are a particular category of fragile workers. These are twice as likely as employees to suffer from poverty and social exclusion. Self-employed workers are indeed particularly exposed to sudden drops in earnings (Eurofound 2017). In eight EU countries, including Belgium, France and Italy, the self-employed are barred from one or more of the insurance-based schemes that are mandatory for salaried employees such as sickness, unemployment and/or occupational injury. However, even in countries where the self-employed can access social insurance programs, they might be under-protected in practice (Spasova *et al.* 2017).

The Covid-19 epidemic has emphasised the fragility condition of the self-employed, thus making it necessary to quickly adopt *ad-hoc* extraordinary fiscal measures to support them. In this regard, the Italian government has simplified and extended the existing social protection system. figure 1.2 shows the way the social security benefits' structure has extended its protective capacity, thereby assuming a structure that is more oriented towards universalistic welfare schemes. In particular, the data highlights a notable increase in beneficiaries of the wage guarantee fund *(Cassa Integrazione Guadagni)* (around six hundred thousand in 2019 vs seven million in 2020). On the other hand, the standard unemployment insurance for employees (NASpI) decreased, though only in the segment concerning permanent subordinate work. The new relevant measure is represented by the bonus. This kind of benefits, which was absent before the crisis, suggests a temporary extension of the social protection system towards the self-employed and contingent work that was little explored in the past.

Figure 1.2   Extension of social protection measures from 2019 to 2020 (beneficiaries' values in thousands)
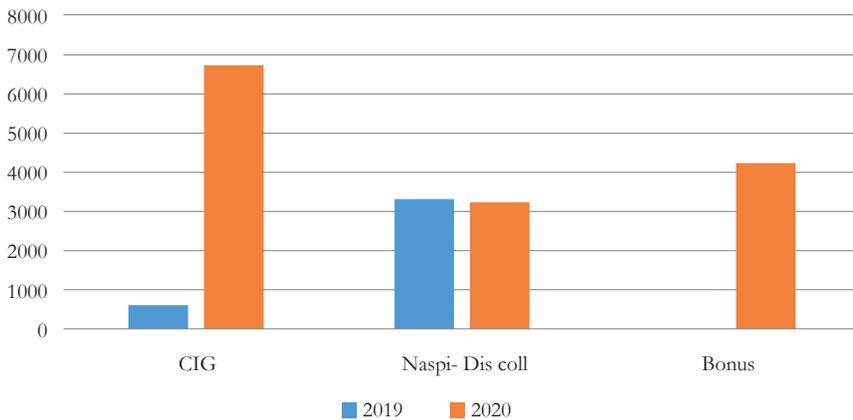
Source: Inapp elaborations on INPS data
<https://ec.europa.eu/social/BlobServlet?docId=24778&langId=da>

Tables 1.1 and 1.2 show that more than 4 million people, half of which are self-employed, have had access to bonuses.

Table 1.1   Number of beneficiaries and total expenditure of Cig, NASpI, Dis Coll, Bonuses (2019-2020)

Social security measures					
2019			**2020**		
Benefits	**Beneficiaries (thousands)**	**Expenditure (millions)**	**Benefits**	**Beneficiaries (thousands)**	**Expenditure (millions)**
WAGE GUARANTEE FUNDS			WAGE GUARANTEE FUNDS		
Cigo	420.4	479	Cigo	2,762.1	7,702
Cigd	0	0	Cigd	1,618.4	4,215
Cigs	187.9	939	Cigs	213.3	751
Fondi di solidarietà	12.1	23	*Fondi di solidarietà*	2,124.4	6,064
UNEMPLOYMENT INSURANCE			UNEMPLOYMENT INSURANCE		
NASpI (*ex lavoratori dipendenti extra agricoli*)	2,754	15,166	NASpI (*ex lavoratori dipendenti extra agricoli*)	2,657	15,932
NASpI (*ex operai agricoli*)	553	2,097	NASpI (*ex operai agricoli*)	544	2,194
Dis-Coll	20	44	Dis-Coll	24	46
BONUS			BONUS		
Indennità, Bonus	Non presente	0	Indennità, Bonus	4,227.5	6,000
Totale	**3,947**	**18,748**	**Totale**	**14,170**	**42,904**

Source: Inapp elaborations on INPS data
<https://ec.europa.eu/social/BlobServlet?docId=24778&langId=da>

Fragile workers are also linked with working poor people. There are different approaches to classify the concept of a workforce in poverty condition. According De Minicis and Marucci (2019), the terms 'in-work poverty' and 'working poor' are usually used as synonyms. However, different categorizations may apply if we consider various national statistics, different analyses, or if the concept is more adapted to 'poorness' rather than 'employment'. Another variation may occur in identifying the poverty level and in considering an individual or a family. The European Union recognizes 'in-work poverty' through an indicator introduced in the European portfolio of social indicators in 2005[1]: the Indicators' Sub-Group (ISG) identifies the 'in-work at-risk-of-poverty rate'

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[1]   European Commission. 2009. Portfolio of Indicators for the Monitoring of the European Strategy for Social Protection and Social Exclusion. Employment, Social Affairs and Equal Opportunity DG, Brussels <http://ec.europa.eu/social/main.jsp?catId=756> (last visited July 2018). Definition: <http://ec.europa.eu/social/main.jsp?catId=756&langId=en&id=52>.

as a percentage of the workforce that were 'mainly' at work during the previous year (at least 6 months) while belonging to households with an income below the 'at-risk-of' poverty edge (60% of median equivalised disposable income, after social transfer). As an initial response, poverty can be challenged with better employment. In the statistics and analysis published by the U.S. Bureau of Labour Statistics, the 'working poor' are people who spend 27 weeks (almost 7 months) or more in a year in the labour force either working or looking for work, but whose incomes fall below the poverty level.

Table 1.2   Beneficiaries of Bonuses by gender and average amount

Beneficiaries	Men	Women	Total	Average amount
Professionals/ Collaborators	203,342	209,134	412,476	1,450 €
Self-employed	2,007,792	840,683	2,848,475	1,196 €
Seasonal workers	132,735	143,848	276,583	3,000 €
Agricultural workers	334,737	217,962	552,699	1,099 €
Entertainment workers	30,455	19,464	49,919	4,031 €
On-call workers	23,576	33,660	57,236	3,906 €
Fixed term workers (tourism)	10,307	9,324	19,631	2,430 €
Others	5,654	4,899	10,553	3,435 €
Total	**2,748,598**	**1,478,974**	**4,227,572**	**1,407 €**

Note: "Others" includes occasional self-employed people, home sellers, self-employed workers of the so-called 'red areas', self-employed fishermen, sailors.
Source: Inapp elaborations on INPS data (March 2021)
<https://ec.europa.eu/social/BlobServlet?docId=24778&langId=da>

The risk of being a working poor is greatly influenced by the type of contract: the risk of monetary poverty was about twice as high for those working part-time (15.8%) than for those working full time (7.8%), and almost three times greater for employees with temporary jobs (16.2%) than for those with permanent jobs (5.8%). Contracts with a duration of less than 1 year are widely spread (18.3%) among the working poor than 1 year or more contracts (9.1%). In Italy, as in most of European Countries, the rise in the number of working poor people was accompanied by an increase in poverty rates (with high levels before the two crises too, 2008-2020) and precarious jobs, in terms of flexible employment (temporary agency, intermittent, seasonal) and short-term duration contracts.

Following a dissertation concerning the loss of salary levels, the decrease in working hours (mainly due to involuntary part-time and involuntary temporary employment) and the effects of this dynamics on inequality indicators, an interesting point of view emerged, namely considering hourly wages to calculate the number of working poor people to avoid differences by labour intensity, which are often linked to involuntary overtime work. In-work poverty is thus measured as percentage of workers with hourly net income under ⅔ the hourly net income median. The main findings demonstrate that, also in view the poverty gap ratio, both the number of the working poor and the intensity of their poverty increased during 2004-2019 (De Minicis 2018b). Another important finding concerns the fact that this phenomenon is accompanied by the spread of non-qualified work. The Great financial economic crisis brought about higher poverty rates mainly in low-skilled people and less educated masses. Those people, too after the pandemic crisis, accepting now less remunerative jobs, are going to be more and more vulnerable and near a financial break-down. The focus is the same: employment is no longer a guarantee of stability, security, and protection. It must be supported by better Employment Protection Legislation (EPL) and public expenditure, both as social subsides and active labour policies. In Italy, as in other EU countries, we are now in a phase defined as 'economic regrowth', too respect the pandemic crisis but things are not back to the pre-crisis period: employment has changed, people have changed, poverty has changed: many permanent contracts in the new labour activation have been replaced by temporary contracts, and recently we have been witnessing an increase in intermittent workers, probably due to the spread of new employment linked to the gig economy and technological algorithmic changes (see section 1.2). This trend should be evaluated in the next years to identify whether it is an effect of labour market regulation (flexibility, incentives, low EPL) or demand side dynamics (new technologies, the raise of the platform work, international trade, globalization, financial capitalism, consumptions).

1.2   Platform workers

Attempts to classify the platform economy and, more specifically, platform work, face considerable difficulties due to the constant evolution of the phenomenon and of its often-shady core features. A review carried out by Eurofound in 2018 clearly illustrated the presence of ambiguities in the terms and concepts adopted, with terms such as 'collaborative economy', 'sharing economy' and 'platform economy' being often used as synonyms[2]. Back in 2016, the European Commission itself brought under the term of 'collaborative economy' both for-profit and not-for profit platforms, as well as

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[2]   Eurofound (2018).

platforms addressing peer-to-peer sharing services and those concerning the sale of goods, the rental of assets or the performance of labour[3]. In Snircek's (2017) digital platforms are organised according to five main types:

- advertising platforms (Google, Facebook) that extract information about users, analyse it and then use the product to sell advertising space;
- cloud platforms (AWS, Salesforce) that own the hardware and software needed by digital businesses and make it available on demand (cloud computing);
- industrial platforms (Predix by GE, MindSphere by Siemens) that build the hardware and software needed to transform traditional manufacturing companies into digital production processes based on the Internet of Things (for these processes and their supporting policies, Germany coined the term, later adopted in Italy as well, of Industry 4.0);
- product platforms (Rolls Royce, Spotify, Zipcar) used to transform goods into services (good-as-a-service model), for example by providing a car sharing service;
- platforms of primary interest for our reflections, namely 'lean platforms' or 'labour platforms' (Uber, Airbnb, Deliveroo, Amazon Mechanical Turk) that acquire, organize and sell work activities in the digital space.

In turn, labour platforms can be divided into two macro-typologies:

- online-based platforms, which target cognitive activities performed digitally, with work performance being outsourced across the world and possibly divided in micro-tasks. The main platforms of this kind are AMT, Upwork, Speaklike, Addlance and target activities like: design, translation, image recognition, or programming;
- location-based platforms, where work takes place partially or totally in presence, with highly localised performances, definable and identifiable time and places. The main platforms of this kind are: Deliveroo, Uber, Just Eat, Glovo, Uber eats; the sectors addressed span from transport to home care or care services.

The main difference between the two typologies lies in the increase possibility on part of the first to arbitrage the applicable legislation, with the resulting consequences in terms of workers' rights, social protection, enforcement of rights, on the top of the possibility to exploit advantages from competition between workers.

1.2.1   Work organisation and working conditions: hints from national and international data

National and international data on the size and workforce of platforms helps to shed a light on their business model and on the consequences for workers. In this respect, a recent study by Inapp compares key figures on the financial flows and the organizational structure for the main on-location labour platforms active in the field of food delivery in Italy (table 1.3).

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[3]   European Commission (2016).

Table 1.3   Financial and organizational data of on-location-based platforms active in food delivery in Italy (year 2017)

	Aggregate Turnover 2017	Raised capital	Year of establishment	Orders per year	Seat	Employees	Riders	Restaurants	Number of cities
Deliveroo	20 mln +	0	2015	n.d.	Milan	70+	2000+	1900+	11
Moovenda	2,5 mln +	2 mln	2015	108 k	Rome	25	150	800	5
Foodracers	2,5 mln +	n.d.	2015	98 k	Treviso	n.d.	n.d.	600+	n.d.
Bacchette Forchette	2 mln	0	2015	n.d.	Milan	4	n.d.	135+	2
PrestoFood.it	1 mln +	165 k	2013	54 k	Catania	11	90+	290	5
Just Eat	n.d.		2011	n.d.	Milan	105	External partners	7600+	18+
Foodora	n.d.		2015	n.d.	Milan	n.d.	n.d.	1000+	4
UberEATS	n.d.		2016	n.d.	Milan	n.d.	n.d.	n.d.	n.d.
Glovo	n.d.		2015	n.d.	Barcelona	100 +	2500+	1000+	10
Cosaordino	n.d.	n.d.	2015	n.d.	Lecco	5	30	100+	6
Sgam	n.d.	450 k	2015	n.d.	Bologna	n.d.	120	100	1
MyMenu	n.d.		2013	n.d.	Padua	n.d.	n.d.	n.d.	n.d.

Source: Guarascio (2018)

Apparently, platforms which are characterized by an important aggregate turnover – Deliveroo, Glovo, Just Eat – use algorithms as a substitute for highly specialised managers. Yet, if we carefully consider their organisational model, the situation appears more complex. Algorithms organize a much larger workforce. On top of employees, Deliveroo involves more than 2,000 riders and 1,900 restaurants; Glovo covers 2,500 riders and 1,000 restaurants. In addition, survey data suggests that informal work may prevail even over the use of (bogus) self-employment contracts. In Italy, for example, 42% of platform workers declare to carry out their activities solely based on informal agreements (figure 1.3).

The avoidance of the 'employment' status deprives platform workers of important rights and protections, and the platforms' dominant business model seems a '2.0' version of previous experiences relying on 'flexibility' at the core, rather than at the margin of their workforce. For instance, an ad-hoc analysis implemented by INPS and Veneto Lavoro (2016) concerning an Italian on-demand relationship (i.e., voucher-based work) found that about 700 firms purchased more than 5,000 vouchers and 'employed' more than 50 voucher-based workers each in 2015, meaning a 0.15% of clients covered 9% of vouchers purchased in that year. The reliance on contingent work and the consequences for pay are particularly evident for online-based labour platforms (table 1.4). Indeed, the presentation itself by one of the most famous crowd-work platform points to a service guaranteeing cheap workforce[4].

Figure 1.3 Platform workers by status/contractual relationship (%)
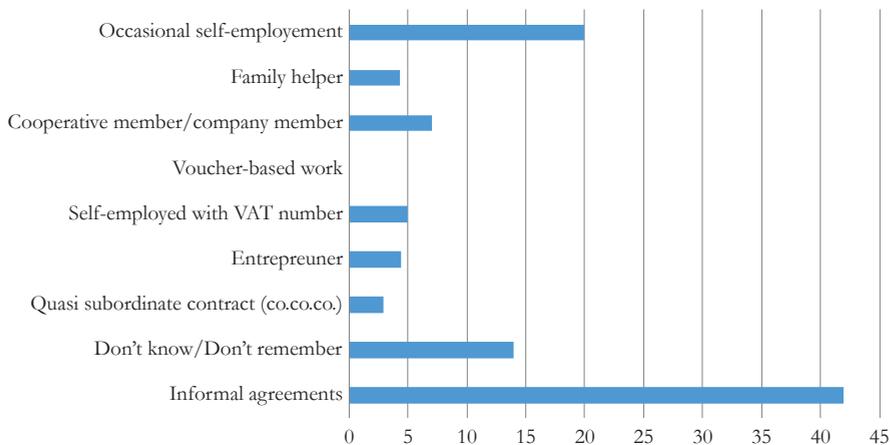
Source: De Minicis *et al.* (2019b)

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[4] See: <https://www.mturk.com/get-started>.

Table 1.4   Economic and organizational characteristics of selected online-based platforms

Nome	Dipendenti	Volume di investimenti ($ Mln)	Crowd-workers loggati	Paga oraria (Minima/ Massima/ Media) ($)	Volume di attività annue
Amazon Mechanical Turk	10	10-150	500,000	3.77/29.43 10.65	100,000-600,000
Clickworker	10		800,000	0.50 /17.68 3.84	
Crowd Guru	15		50,000		
Crowdflower	65	10		0.51/15 2.93	
Javoto	36		80,000		
Prolific	3		70,000	0.47/16.44 6.60	
Mylittlejob	25		216,450	0.40/56.25 9.97	115,700
Testbirds	100		250,000		
Content.de	15		7,000		

In such a situation, formally hired employees are usually few units, while the entire workforce involved in the production process can reach a maximum of 800,000 potentially active units[5]. Moreover, in order to adequately measure work performed completely online, it is essential to use a system monitoring the activity of platforms using algorithmic software able to track the supplied jobs and the involved workers and enterprises. An example is the Online Labour Index (Oxford Internet Institute). The data recorded by this indicator, which monitors 162 web-based online labour platforms in the world, shows that in 2020 there were 163 million registered on-line user workers globally, out of which 19 million were active, and that 5 million were considered full-time workers, i.e., earning at least 1,000 dollars a month (see figure 1.4).

Figure 1.4   Top work activities of online-based platforms by country
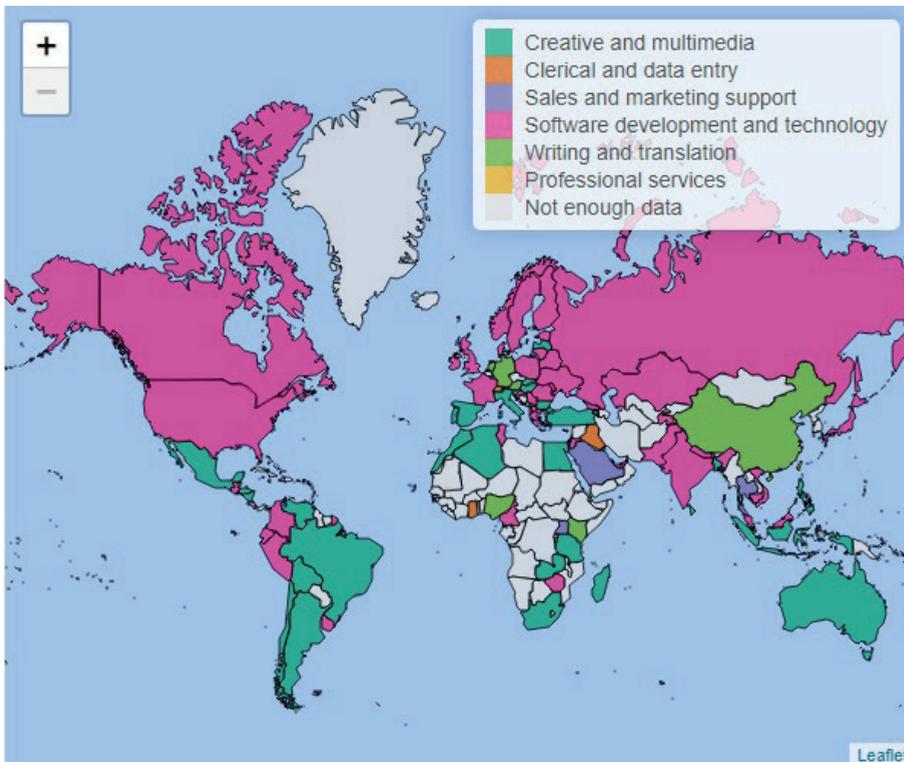
Source: Online Labour Index
<https://ilabour.oii.ox.ac.uk/online-labour-index/>

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[5]   This dynamic confirms the common practice in platform companies of classifying their workforce as self-employed, or independent contractors, which represents – at least in the global North – a massive shift towards insecurity of income and lack of social and employment protections for many occupations (Vandaele 2018).

1.2.2 Regulatory attempts and measures in the field of social protection

The debate over the possible protections for platform workers follows two broad approaches. Some authors, such as Harris and Krueger (2015), have made the case for establishing an entirely new legal category of 'independent workers'. They assert that existing categories of 'employees' and 'self-employed workers' are ill suited to the new working arrangements arising in the platform economy. They stress that platform workers can choose if and when to work; they can be active on several platforms at once; and they can carry out private tasks while waiting for new paid jobs to execute. These features make it difficult, in their view, to quantify the working time of independent workers and assign responsibilities to a particular employer. For these reasons, the authors propose that independent workers should be exempted from some of the benefits available to employees, including overtime and minimum wage. Eisenbrey and Mishel (2016) note that major platforms exert substantial control over the work performance, resembling the features of employers in some respects. For instance, Uber or Deliveroo set service fees and performance standards. Their drivers or riders can be sanctioned for not accepting jobs while they are logged into the app. Uber also offers a guaranteed wage based on the data it already collects about the time that drivers are logged in and available for work.

Similar positions, albeit with different nuances, can be found also among policy measures. Some countries opted to classify platform workers as self-employed, possibly attaching to them some ad-hoc protections. France introduced provisions granting platform workers the right to unionize, the right to strike, and the right to training, yet entitling platforms to set their own set of rules and rights targeting themselves and platform workers, a provision later ruled as unconstitutional (French Law 2018/771). Spain opted to apply a rebuttable presumption of employment attempting to ensure platform workers the full rights and entitlements of other employees (Spanish Royal Law Decree 9/2021). In Italy, the situation appears diversified with different provisions targeting platform workers and delivery platform workers (Italian Law 128/2019) (Luande and De Minicis 2021), as well as with divergences in their interpretation and, especially, in case-law and collective agreements (see table A1 in appendix A). Nevertheless, most measures are only for location-based platform work. The reason is easy to pinpoint. This type of activities is much more visible, and it enables workers to gather in physical spaces, where they can share their views and organise themselves, thus recalling some trends in work organisation and workers' self-organisation typical of the traditional economy.

At the same time, the growing phenomenon of online-based platform work seems to remain overlooked. Whilst the discussion over the classification of these workers may require a closer look at the different ways the related platforms influence the performance of work, the strong wage/price competition urgently requires the introduction

of minimum pay standards for self-employed workers, thereby guaranteeing them a decent pay. For what concerns self-employment work taking place via platforms, compliance with minimum pay could be ascertained even by requiring their work-related data to be interoperable with public databases.

A similar experiment could be linked with the introduction of a new universal social safety net embracing contingent work, both in terms of contributions and benefits. Each worker could be assigned a personal social security account where to accumulate all social security contributions also deriving from different employers or contracts (De Minicis *et al.* 2019a; INPS 2021)[6]. By means of an app, workers could get information on the accrued entitlements, the received payments and the periods of work, thus making themselves and authorities capable of reconstructing the working career and tackling possible inconsistences between declared and actual worked hours. Overall, the combination of a presumption of employment, a right to a decent pay for self-employed and universal and transferrable social safety nets could represent the basis to tackle precarious work, both within and beyond platforms.

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[6] The idea is to have an individual account for each (occasional) worker, thereby covering social security contributions, severance pay, and other contributions and insurance premiums paid by employers. A similar attempt was made in Austria in 2003 and is currently under discussion in Spain as part of measures geared towards reducing dualism in the labour market (Austrian *mochilla*) (Pastor Martínez 2020). The mochila (bag) shall work as a tool able to unify benefits and entitlements accrued along discontinuous and fragmented careers. At the end of each relationship, the worker gains entitlements with funds that they can maintain in the following jobs. In the Austrian model, the bag works as an indemnity in case of dismissal. The fund is a personal entitlement of the worker, who can decide whether to use it or not when the employment relationship is interrupted. Should the entitlement be preserved at the end of the working career, it can be accrued to the pension benefits.

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Appendix A

Tabella A1. Labour platforms - Approaches and regulatory attempts across the world

Country	Status	Main features	Type(s) of addressed platform
Spain	Employment	Following a consistent case law, The Royal Law Decree 9/2021 introduced a rebuttable presumption of employment for food delivery platform workers. The law assumes that algorithms are able to monitor, organize, evaluate and track the performance and the results of the work performance, this way enabling the organization of labour performances implemented in different time and places in a way similar to the employer/employee scheme. The law also amends the Workers' Statute in a way to guarantee platform workers and, consequently, unions to know the functioning of algorithms used to evaluate work performance and to assign tasks. An expert committee shall be established to advice the government and to assess the lawful use of algorithms and of artificial intelligence in employment relationships.	Location-based platforms (food delivery sector)
France	Self-employed (ad-hoc category)	Food delivery workers are classified as self-employed, yet enjoying some employment rights (right to unionize, right to strike, and right to training). In turn, platforms must adhere to some provisions ensuring transparency of the algorithms, and the compliance with the Code of transports.	Location-based platforms (food delivery sector)
Germany	Self-employed (ad-hoc category)	Despite being usually classified as self-employed, the German government set out a proposal to guarantee platform workers the right to statutory social protection coverage regardless of the adopted status. The German legislation also entails a third status, which could potentially be used in the future to cover platform workers.	Labour platforms
Brazil	Self-employed (ad-hoc category)	Workers were recognized some protections when performing labour for platforms, by applying provisions concerning health and safety at work as entailed for employees. According to the Brazilian case law, firms shall assume some of the typical employers' responsibilities.	Location-based platforms

1. Future of work: challenges for the Italian Labour Market

Country	Status	Main features	Type(s) of addressed platform
UK	Intermediate status	Considered as 'workers', an intermediate status between self-employment and employment, platform workers are thus recognized some employees' rights, like the minimum wage, paid holidays and working time regulations, protection against discrimination at work, but not others, like the protection against unfair dismissal.	Location-based platforms
Italy	Self-employed Employment (part-time work)	The Law n. 128/2019 solved only partially problems of classification of platform workers. On the one side, it presumes platform workers (both location and online based) are 'hetero-organised' (as per the interpretation provided by the Supreme Court, a self-employment relationship attached employment rights). On the other side, it set out specific protections for riders only, with occasional relationship, including statutory insurance against accidents at work, and limitations on the use of rating and ranking systems to assign shifts. While doing so, the law assigned strong prerogatives to collective bargaining for both categories of platform workers. So far, unions achieved an agreement with a large platform recognizing food delivery platform workers as employees, yet keeping a fragmented working time (even entailing 10 working hours per week, across six working days). Another agreement signed by the right-wing union UGL with an organisation covering top food delivery platforms classifies platform workers as self-employed applying some of the protections granted by Law n. 128/2019, but also derogating others, like the ban to piece-based pay. The agreement repeatedly labels the platform as a bare algorithmic technological structure, an IT service provider supplying a service matching supply and demand of labour in the digital space.	Labour platforms Location-based platforms (food-delivery)
China	Intermediate status	Evidence suggests the relationship between riders and platform resembles the typical employer/employee structure, in particular concerning economic dependency, performance of work mostly for one platform (in the case of riders), and the strong coordination and sanction power performed by the platform over workers (Fei Wu and Zheng 2020).	Location-based platforms

2. Policy option A: an improved insurance system for the unemployed

One of the most relevant improvements of T-DYMM 2.0 (released in 2016) *vis-à-vis* the first release of the model was the inclusion of unemployment benefit legislation in the simulation process. This allowed for a more precise assessment of the impact of discontinuous careers on pensions (unemployment spells are usually covered by figurative contributions) and, most of all, set the foundation for the computation of overall poverty and inequality indicators in T-DYMM. T-DYMM 3.0 and 3.1 have built on the advancements of the previous release of the model and have introduced the legislation on the so-called Dis-COLL (*ad-hoc* unemployment insurance for 'parasubordinate' workers) in the baseline.

In Policy option A, we test the possible expansion of the legislation on unemployment compensation, first by extending the NASpI (standard unemployment insurance for employees) to 'parasubordinate' workers, then, more importantly, by introducing an amplified version of the ISCRO (a recently introduced allowance for selected self-employed workers). As mentioned in section 1.1, the Covid-19 crisis has exposed the limits of the Italian system of unemployment protection, as no allowances were in place for self-employed workers and the Government had to intervene with *ad hoc* extraordinary relief measures. Policy option A assesses the possibility to introduce a permanent unemployment benefit to all self-employed workers by expanding on a recently introduced measure.

A few assumptions are in place in the simulation of unemployment benefits. Firstly, unemployment benefits from NASpI and Dis-COLL are not compatible with labour earnings in T-DYMM, while partial compatibility would be allowed by regulations[1]. Secondly, while in T-DYMM 3.0 (i.e., the previous baseline) the take-up rate of social transfers was simplistically assumed at 100 per cent, in T-DYMM 3.1 take-up rates for minimum income schemes and unemployment benefits are aligned to the latest avail-

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[1] Under the law, both benefits are compatible (if the working status is promptly communicated to INPS and upon a reduction of the allowance equal to 80% of the perceived labour income) with labour income up to € 8,145 if from subordinate work and up to € 4,800 if from self-employment. As income thresholds are very low, T-DYMM simplistically assumes no compatibility between work and NASpI or Dis-COLL.

able data[2]. For both minimum income schemes and unemployment benefits, a strong persistency for the state 'recipient' is imposed, i.e., if a person satisfies requirements in period *t-1* and receives the benefit, there is a very strong chance they will also receive it in period *t*, if they still meet requirements. In addition to that, in order to simulate the so-called '*stato di disoccupazione´* mentioned by the legislation[3], when it comes to unemployment benefits, recipients are selected according to a score estimated on the probability of being unemployed in the EU-SILC survey *vis-à-vis* non-active[4].

Concerning labour income from self-employment, it is worth recalling that in the current version of T-DYMM incomes from INPS archives for specific categories of self-employed workers (within a certain income bracket) have been corrected with information from Tax Returns provided by the Department of Finance. The adjustment delivers a much more accurate representation of income distribution for self-employed workers than previous versions of the model[5].

2.1   Extension of NASpI to parasubordinate workers

Article 15 of Italian Legislative Decree n. 22/2015 (part of the so-called 'Jobs Act') introduced in the Italian system of unemployment insurance a new type of benefit, called Dis-COLL, specifically targeting what we have referred to in our previous reports as 'parasubordinate' workers (*Collaboratori Coordinati e Continuativi,* Co.Co.Co). The computation formula for the Dis-COLL is similar to the NASpI, but its duration is considerably shorter (maximum 6 *vis-à-vis* maximum 24 months) and it does not award figurative contribution (i.e., in terms of pension rights, periods under coverage of Dis-COLL are not considered).

As part of our policy option A, we set to extend the NASpI institute to parasubordinate workers in an effort to simplify the system, increase equality amongst the unemployed and strengthen the coverage of the welfare system both for active individuals (by increasing benefit duration) and upon retirement (by paying out figurative contributions).

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[2] For the first two years of the simulation, respective administrative data is employed for the alignments. From the latest available figures onwards, the ratio between actual (administrative data) and potential (obtained from T-DYMM's simulations) recipients is kept constant.

[3] As of art. 19 of Italian Legislative Decree n. 150/2015, "A person is considered to be in *stato di disoccupazione* (lit.: 'status of unemployment') if he/she is not in work and is immediately available for working and for job searching, following the procedures defined by employment services".

[4] Regressions (logit) are run separately for men and women, and explanatory variables include age, area of birth, civil status, parental status, being in education, educational achievement, work experience and number of months spent in unemployment in the past year.

[5] For details, see appendix 1 of the Analysis Report.

2.2 Extension of ISCRO to all self-employed workers

Article 1 of Italian Law n. 178/2020 (2021 Italian Budget Law) introduced a (temporary) new social safety net, known as Extraordinary Indemnity for Income and Operational Continuity (*Indennità Straordinaria di Continuità Reddituale e Operativa*, ISCRO), aimed at extending unemployment protection to self-employed workers holding a Value-Added Tax (VAT) identification number and enrolled in the INPS separate management scheme. It is an experimental benefit instituted for the 2021-2023 period which workers are only able to access once in the three-year period and for a maximum duration of 6 months. ISCRO recipients must have generated, in the year preceding their application for the benefit, an income equal to less than 50% of the average self-employment income earned in the three previous years; to have filed tax returns not exceeding € 8,145; to have paid contributions and to have been registered as VAT ID holders for at least four years. The amount of the ISCRO is determined on the basis of previously earned self-employment income, within a € 250-800 range. For the 2021-2023 period, the contribution rate for self-employed workers holding a VAT ID and enrolled in the INPS separate management scheme is increased by 0.26 p.p. in the first year and by 0.51 p.p. in the second and third. The ISCRO is not compatible with the so-called 'citizenship income' (*Reddito di Cittadinanza*, RdC).

As detailed information on the ISCRO only became available at the end of June 2021[6], T-DYMM's baseline scenario does not account for it. Instead, we have introduced the ISCRO institute as part of our Policy option A scenario, with a few crucial additions: we extend the access to the ISCRO (and the payment of additional contributions) to all self-employed workers, not just VAT ID holders enrolled in the INPS separate management scheme (potential recipients are thus increased from around 400 thousands to over 5 million in 2021); we pay out figurative contributions for periods covered by ISCRO, as done for the NASpI; we apply the policy option for the whole 2022-2070 period; we make ISCRO compatible with the RdC, though the means test for the RdC takes into account all other income, including that pertaining to the ISCRO, hence the simultaneous occurrence of both institute is extremely rare in the simulations. We call this extended version of the Extraordinary Indemnity for Income and Operational Continuity 'ISCRO 2.0'. For ISCRO 2.0, we assume that take-up rates equal those of the NASpI.

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[6] For details, see INPS Circular n. 94/2021.

2.3   Results

2.3.1   Outcomes on target population

The recipients of the Dis-COLL in years 2016-2017 have been about 0.6-0.7% of total recipients of unemployment benefits, therefore most of the impact of Policy option A is due to the introduction of the ISCRO 2.0.

Policy option A extends the number of recipients of unemployment benefits by 3% compared to the Baseline scenario quite steadily across the simulation period (figure 2.1).
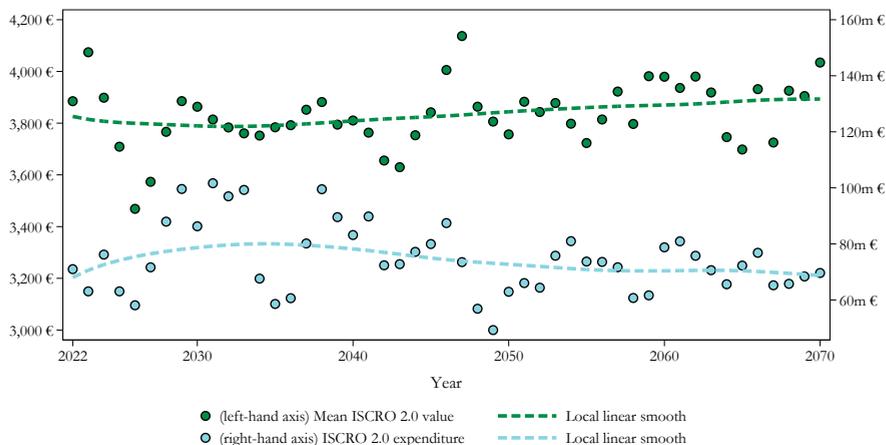
Figure 2.1   No. of unemployment benefits' recipients
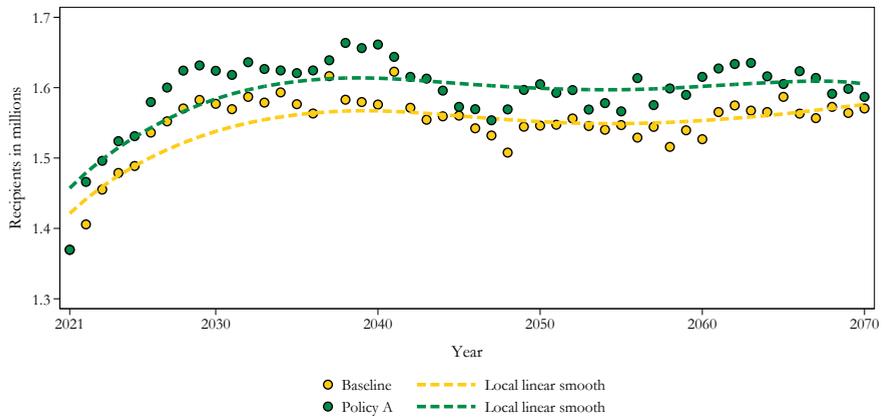
Source: T-DYMM, own elaborations

Overall expenditure for the ISCRO 2.0 and the average value of the benefit are also relatively stable over time (figure 2.2).

Figure 2.2 Average value and expenditure for ISCRO 2.0

Note: values are discounted to the year 2021 using the nominal GDP growth rate. Expenditure is expressed in million euros.
Source: T-DYMM, own elaborations

Table 2.1 compares the two groups of self-employed workers and ISCRO 2.0 recipients for the 5 decades in which the policy is tested (49 years, from 2022 to 2070). While women are less represented than men in the self-employed category, they are more likely to be recipients of the ISCRO 2.0. Similarly, lowly-educated workers, artisans, dealers and farmers and (to a lesser extent) the foreign-born are more likely to be recipients of the ISCRO 2.0 than respectively highly educated workers, professionals and the Italian-born are. While the group of self-employed workers rejuvenates throughout the simulation period (and decreases in size, following recent trends), recipients of the ISCRO 2.0 age significantly after the first decade of simulation. This is because increases in age requirements for retirement (linked to changes in life expectancy) are not matched by sufficiently high increases in employment rates for the elderly in AWG projections, which we employ as alignment figures. Therefore, in T-DYMM simulations, it is not uncommon that individuals become unemployed in their last few active years before retirement, particularly when the Standard Pensionable Age goes beyond 67.

Table 2.1   Self-employed and ISCRO 2.0 recipients' characteristics throughout the simulation period

Self-employed

	Average age	Sex		Area of birth			Educational achievement			Work category	
		Females	Males	Italian	EU	non-EU	Elementary and compulsory	Upper secondary	Tertiary	Artisans, dealers and farmers	Professionals
2022-2030	49.3	38%	62%	89%	2%	8%	26%	46%	27%	74%	26%
2031-2040	49.4	41%	59%	84%	3%	13%	22%	48%	30%	73%	27%
2041-2050	48.2	44%	56%	79%	4%	17%	21%	48%	31%	75%	25%
2051-2060	48.0	45%	55%	75%	4%	21%	22%	48%	30%	77%	23%
2061-2070	47.9	45%	55%	73%	4%	23%	24%	47%	29%	78%	22%

Recipients of ISCRO 2.0

	Average age	Sex		Area of birth			Educational achievement			Work category	
		Females	Males	Italian	EU	non-EU	Elementary and compulsory	Upper secondary	Tertiary	Artisans, dealers and farmers	Professionals
2022-2030	53.3	57%	43%	88%	3%	9%	46%	38%	16%	82%	18%
2031-2040	56.0	59%	41%	85%	5%	10%	43%	43%	14%	86%	14%
2041-2050	55.7	65%	35%	81%	4%	15%	35%	47%	18%	85%	15%
2051-2060	55.4	66%	34%	75%	6%	19%	35%	45%	20%	84%	16%
2061-2070	56.8	70%	30%	66%	7%	27%	35%	48%	18%	86%	14%

2.   Policy option A: an improved insurance system for the unemployed

Figure 2.3 illustrates the evolution of the incidence and intensity of poverty[7] for the self-employed (individuals who have worked at least 80% of their careers as self-employed) in the Baseline and in the Policy option A scenarios.

Figure 2.3 Headcount ratio and income gap ratio of equivalised disposable income for the self-employed
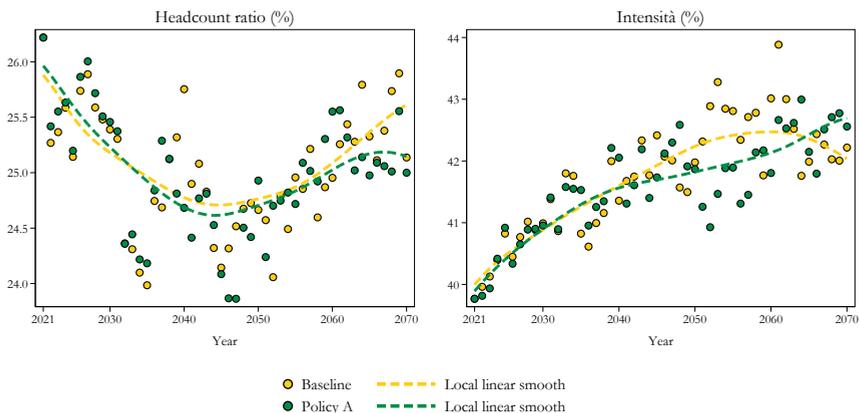
Source: T-DYMM, own elaborations

Figure 2.4 shows the same indicator for unemployed individuals who have lost their job recently (within the same year or in the past year). According to T-DYMM simulations, average labour incomes for the self-employed (especially artisans, dealers and farmers) are projected to decrease as compared to employees, and self-employed workers are also expected to become more susceptible to unemployment risks[8], hence the poverty risk increases after the first half of the simulation. Under Policy option A,

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[7] The 'headcount ratio' *(H)* is an indicator of the incidence of poverty and measures the share of the reference population with equivalised disposable income lower than the poverty threshold, which is 60% of the median equivalised disposable income calculated on the overall population. The 'income gap ratio' *(I)* is an indicator of the intensity of poverty; it is equal to the average income shortfall of the poor compared to the poverty threshold:

$$[3] \quad I = \frac{1}{q} \sum_{i=1}^{q} \left(\frac{z - y_i}{z} \right) = \frac{1}{q} \sum_{i=1}^{q} \frac{g_i}{z}$$

where z is the poverty threshold; y_i is the disposable income of the *i-th* poor individual; q refers to the total poor reference population; g_i and is the individual poverty gap. One can obtain the index known as 'poverty gap', which relates the intensity of poverty to the overall population, by simply multiplying *H* by *I*.

[8] The former is essentially due to the rejuvenation of the category, the latter to increases in age requirements for retirement that are not matched by sufficient increases in employment rates for the elderly, according with AWG projections.

the increase in the last years is less pronounced, even though the impact appears very limited. A small positive effect is also visible on the side of the poverty gap, which is slightly reduced under Policy option A.

Figure 2.4   Headcount ratio and income gap ratio of equivalised disposable income for the recently unemployed
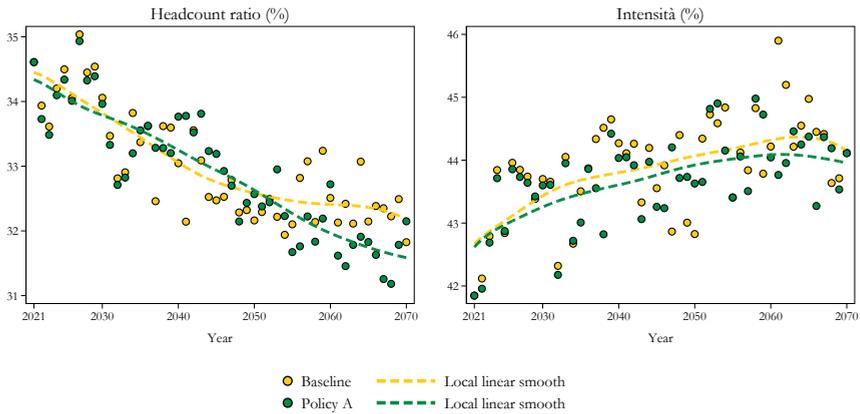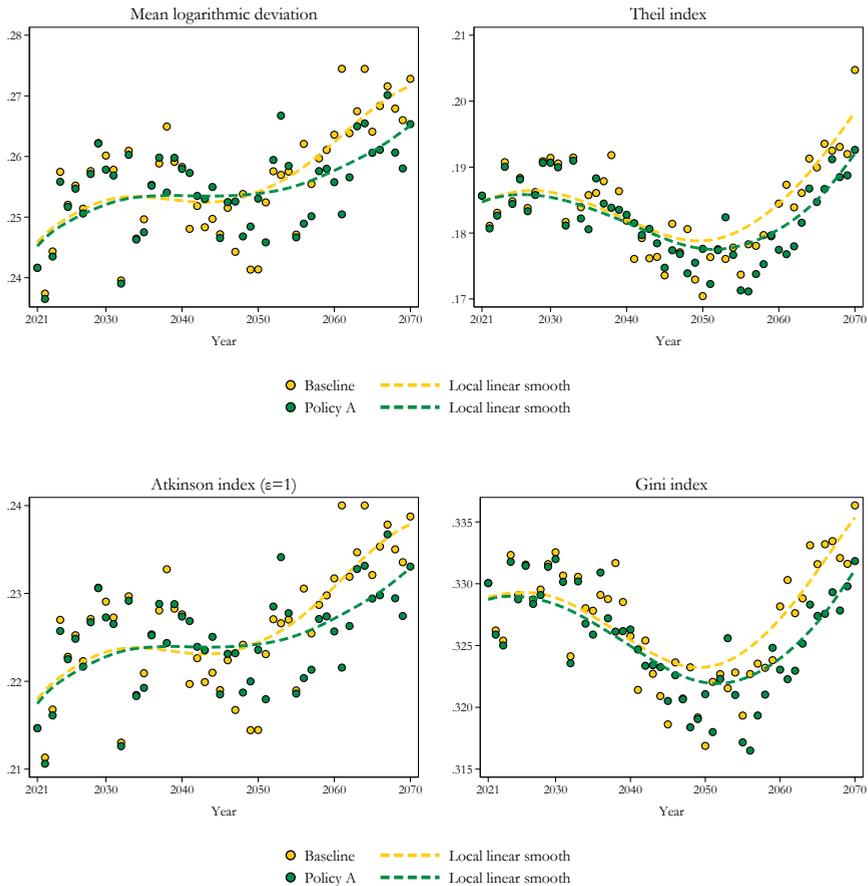

Source: T-DYMM, own elaborations

As far as distributive and inequality indicators are concerned, in the present report we have opted to report four: the Gini index, the Atkinson index, the Theil index and the mean logarithmic deviation[9]. All inequality indicators for the recently unemployed in figure 2.5 are reduced under the Policy option A scenario compared to the Baseline, as the disadvantaged position of the self-employed in terms of unemployment insurance is partially corrected for[10]. The impact is again more visible in the second

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[9] The Gini index is a summary inequality indicator that measures the dispersion of income across the entire distribution. It ranges between 0 (perfect equality) and 1 (perfect inequality). It is more sensitive to changes in the middle of the distribution (Atkinson A.B., 1970, On the Measurement of Inequality, *Journal of Economic Theory*, 2, n.3, pp.244-263). The Atkinson index measures the share of total income that society would be willing to give up in order to eradicate inequality. In other words, if the index is equal to 0.3, it means that social welfare would remain the same if total income were reduced by 30% and the remaining part were to be equally distributed among the population. The Atkinson index allows to weigh incomes according to a predefined level of aversion to income inequality via the parameter ε. When , the indicator is moderately sensitive to changes at the lower end of the distribution, and this is the relatively neutral approach that we have chosen to have in our analysis. Finally, we also make use of generalized entropy indexes, i.e., the mean logarithmic deviation and the Theil index (Bourguignon F., 1979, Decomposable Income Inequality Measures, *Econometrica*, 47, n.4, pp.901-920).

[10] The correction is indeed partial, as the ISCRO 2.0 (for the self-employed) is far less generous than the NASpI (for other workers).

half of the simulation, when the incidence of the ISCRO 2.0 becomes more relevant, according with the simulated evolution of the group of self-employed workers (see above). The extension of the NASpI to parasubordinate workers is also bound to equalize positions amongst unemployed individuals of different working experiences.

Figure 2.5   Inequality indicators of equivalised disposable income for the recently unemployed

Source: T-DYMM, own elaborations

As Policy option A includes the payment of figurative contributions to ISCRO 2.0 recipients and extends the NASpI to 'parasubordinate' workers *in lieu* of the Dis-COLL (the latter does not pay figurative contributions, the former does), it is reasonable to expect some impact on pensions as well.

Average years of contribution at retirement and pension amounts are slightly increased compared to the Baseline scenario for workers who have spent most of their careers as either self-employed or parasubordinate workers (table 2.2). In order to compare individual positions of newly retired individuals throughout the simulation period, we have calculated two indicators: i) a replacement rate, calculated as the percentage ratio between the first pension benefit and the average of the last five labour incomes (a subjective indicator); ii) the percentage ratio between the first pension benefit and the so-called 'minimum amount' (*trattamento minimo*) (an objective indicator)[11]. Values for these indicators are also barely higher in the Policy option A scenario compared to the Baseline. Differences are somewhat visible for the younger cohorts, for which the policy innovation (introduced in the simulation in 2022) has sufficient time to produce its effect[12]. The overall impact of Policy option A on pension contributions accrued and (consequently) on pension amounts is overall minimal.

Table 2.2   Condition at retirement by birth cohort for workers who have spent most of their careers as self-employed or parasubordinate

Birth cohort	Years of contribution*		Gross replacement rate **		Gross pension/ *trattamento minimo* **	
	Baseline	Policy option A	Baseline	Policy option A	Baseline	Policy option A
1960-1964	35.3	35.3	59.7	59.7	1.4	1.4
1965-1969	36.0	36.0	57.1	57.3	1.4	1.4
1970-1974	36.8	36.8	56.1	56.2	1.4	1.4
1975-1979	35.5	35.6	53.9	52.9	1.4	1.4
1980-1984	37.3	37.5	53.0	53.4	1.5	1.5
1985-1989	37.0	37.1	53.7	54.6	1.5	1.5

Note: workers who have spent at least 50% of their careers as either self-employed or parasubordinate workers; *mean; **median.
Source: T-DYMM, elaborazioni proprie

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[11] The 'minimum amount' (*trattamento minimo*) is a threshold amount (€ 515 in 2020) paid out to pensioners belonging to the DB and Mixed regimes. Even though it is bound to disappear once the transition to the NDC scheme is completed, the *trattamento minimo* is used as benchmark for indexation rules and for the computation of a number of benefits.

[12] The five-year birth cohorts for which results are shown (from 1960-1964 to 1985-1989) were chosen as most of their components access retirement within the simulation period (2016-2070).

2.3.2 Poverty and inequality indicators

Figure 2.6 illustrates the evolution of the incidence and intensity of poverty for the active population (between 18 years of age and the Standard Pensionable Age, SPA, set at 67 years in 2021 and linked to increases in life expectancy) by gender. As was the case for the effect on the target group (the self-employed and the recently unemployed), the impact on poverty for active individuals (aged between 18 and the SPA) is also slight and concentrated on the last years of the simulation, when instances of poorer self-employed workers and of unemployment for the elderly are more frequent (see above). The policy seems to affect more visibly active males, despite the fact that, as table 2.1 shows, women are more often recipients of the ISCRO 2.0. It is important to keep in mind that poverty and inequality indicators are measured with reference to the equivalised disposable income, therefore the family structure plays a significant role.

Figure 2.6 Headcount ratio and income gap ratio of equivalised disposable income by sex for individuals aged 18-SPA
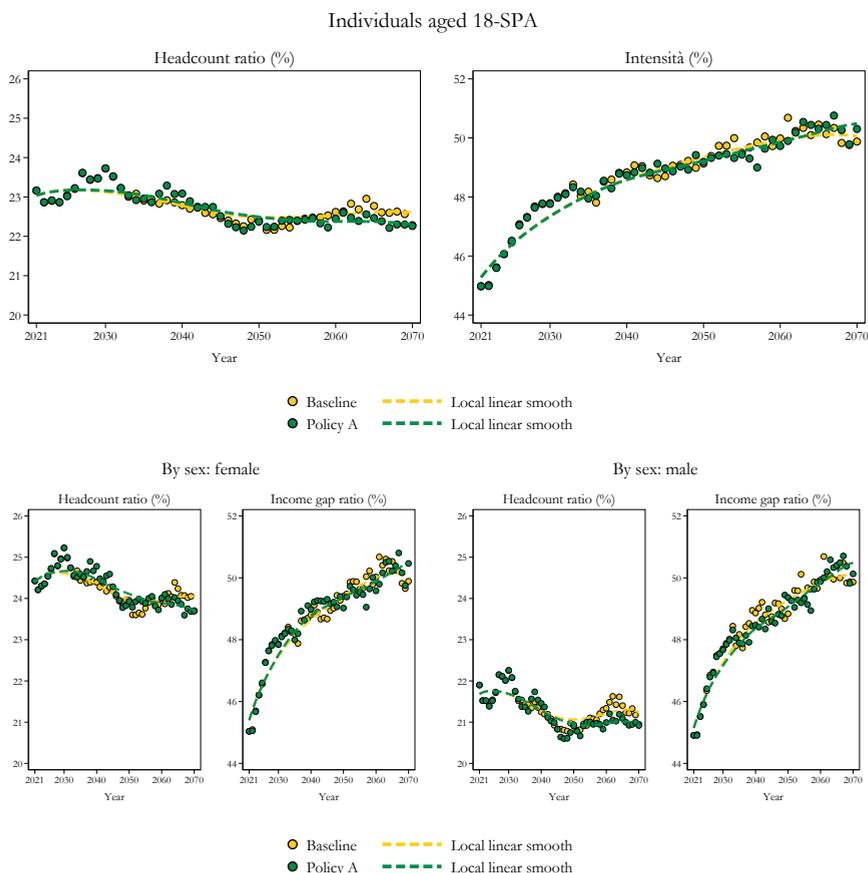
Source: T-DYMM, own elaborations

Figure 2.7 displays trends in income inequality for the active population by gender. The Gini index is lower in the Policy option A scenario, particularly for active males. Inequality measured by means of the income quintile share ratio (the so-called S80/S20) shows very similar results[13].

**Figure 2.7   Gini index of equivalised disposable income by sex for individuals aged 18-SPA**
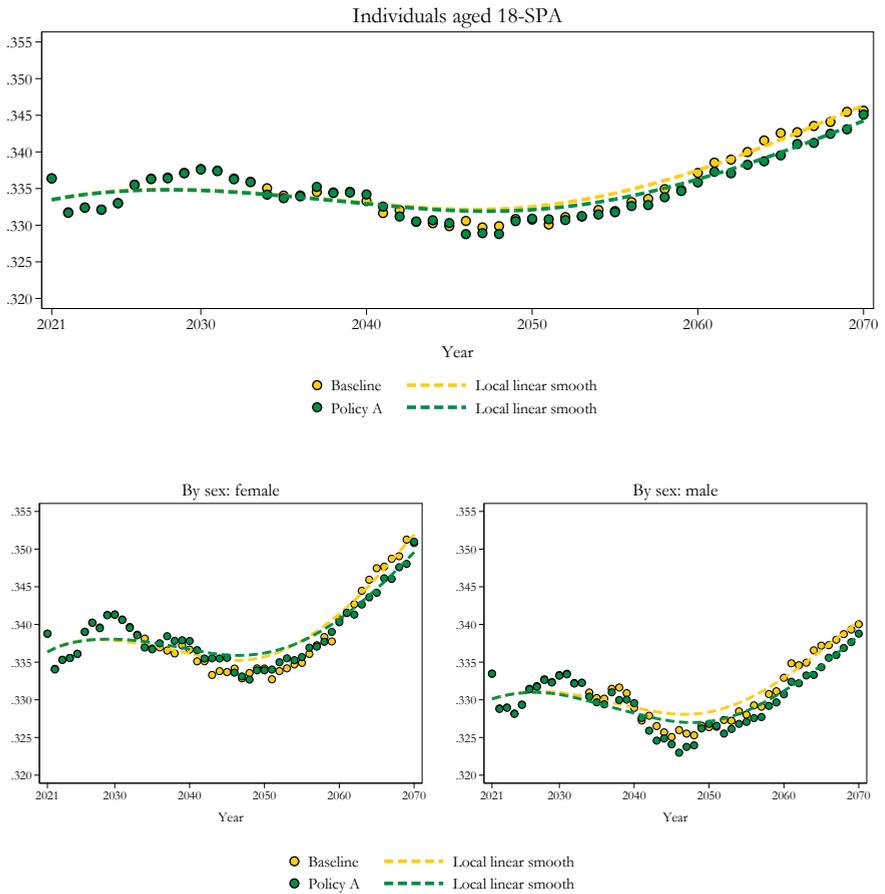
Source: T-DYMM, own elaborations

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[13] The S80/S20 indicator is the ratio between the mean income of the wealthiest quintile and the poorest one. Unlike the Gini index, it focuses on specific segments of the distribution and can therefore be of help in capturing changes at the lower and upper ends.

2.3.3 Impact on expenditure levels

As a further level of analysis, we shall focus on the expenditure side of our policy proposal and assess its feasibility. Figure 2.8 illustrates the yearly expenditure on ISCRO 2.0, the main innovation of Policy option A, and the revenues derived from the additional contribution required of self-employed workers (0.26 in 2021 and 0.51 from 2022 onwards). For all simulation years, additional revenues are much (4-5 times) higher than additional expenditure. The indication from T-DYMM's simulations would therefore be that the additional contribution introduced for the ISCRO would produce a large surplus if the group of potential recipients (and contributors) were extended from VAT number holders to all self-employed workers, as proposed for the ISCRO 2.0 in Policy option A.

**Figure 2.8 Additional expenditure and additional revenues from ISCRO 2.0**
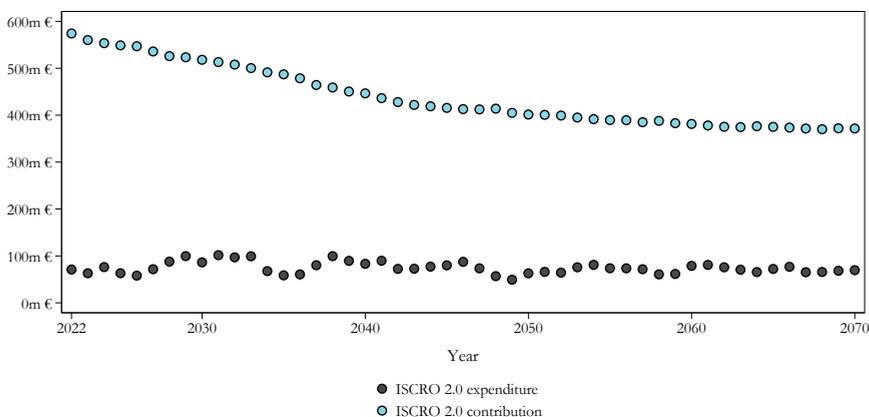
Note: values are discounted to year 2021 using the nominal GDP growth rate. Values are expressed in million euros.
Source: T-DYMM, own elaborations

Yearly expenditure on unemployment benefits increases in the Policy option A scenario across the simulation period compared to the Baseline scenario by about 2.5% (figure 2.9).
The additional expenditure is much smaller (about 0.5% across the simulation period) if we take into account the overall social expenditure for active individuals (18-SPA), as shown in figure 2.10. The introduction of the ISCRO 2.0 would not be very costly in itself and it would also decrease access to other social safety nets; most notably, the expenditure on the *Reddito di Cittadinanza* would decrease by about 0.4% across the simulation period.

Figure 2.9   Unemployment benefit expenditure index
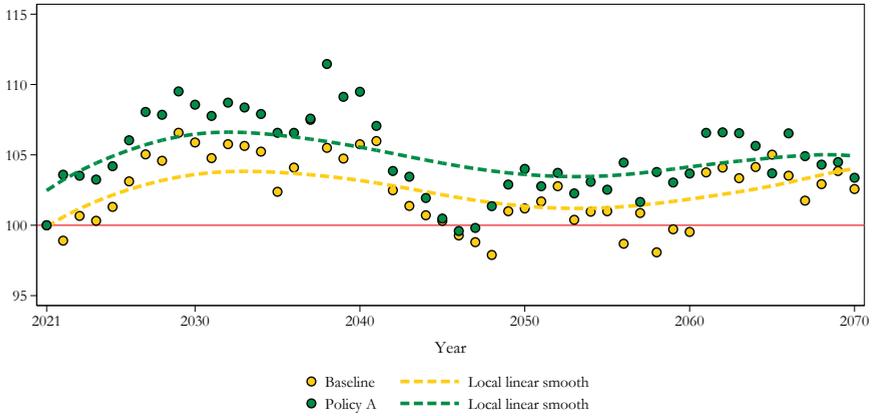
Note: values are discounted to year 2021 using the nominal GDP growth rate. The base index value is 100 and stands for unemployment benefit expenditure for the baseline scenario in 2021. Unemployment benefit expenditure is composed of NASpI, Dis-COLL and ISCRO 2.0 expenditure according to the scenario considered.
Source: T-DYMM, own elaborations

Figure 2.10 Social expenditure index for active individuals (aged 18-SPA)
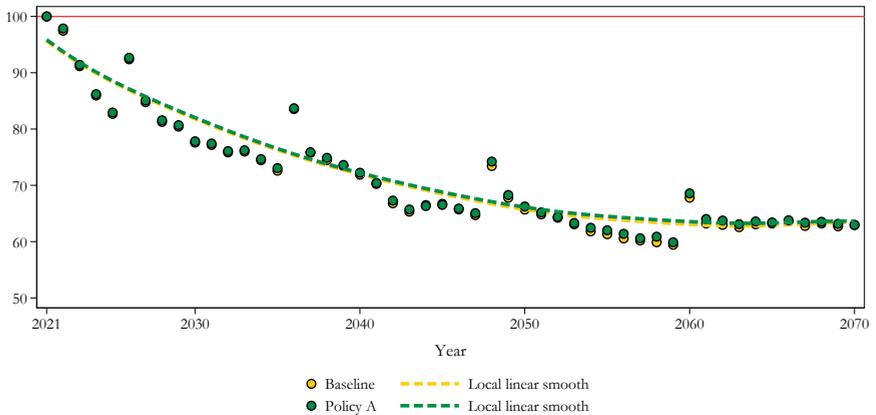
Note: values are discounted to the year 2021 using the nominal GDP growth rate. The base index value is 100 and stands for social expenditure for the baseline scenario in 2021. Social expenditure includes pension benefits, unemployment benefits, family allowances, minimum income benefits and child benefits. See table 2.14 in the Analysis Report for a detailed description of social assistance simulated benefits.
Source: T-DYMM, own elaborations

3. Policy option B: a minimum pension for NDC workers

3.1 Guaranteed Pension (*Pensione di Garanzia*)

Article 6 of Italian Law n. 638/1983 introduced the Supplementation to a 'minimum amount' (*Integrazione al Trattamento Minimo*). As of today, the 'minimum amount' is a threshold sum (€ 515 in 2020) paid out to pensioners belonging to the Defined Benefit (DB) and Mixed regimes. For workers entirely enrolled in the Notional Defined Contribution (NDC), i.e., workers who started contributing to the pension system from 1996 onwards, a minimum pension amount has not been set as of yet[1], even though the topic has been gaining larger attention as the first 'fully' NDC workers approach pensionable ages[2].

In our Policy option B, we test out the introduction of a minimum pension for NDC workers in line with the computation logic underlying the NDC scheme; we call it a 'Guaranteed Pension' (*Pensione di Garanzia*, PdG).

Notional Defined Contribution schemes mimic Defined Contribution schemes: while they are pay-as-you go schemes (workers' contributions finance pensions currently in payment), computation rules resemble those of funded schemes. As a result, NDC schemes can (theoretically) promise actuarial neutrality and sustainability while burdening contributors (workers) with two essential risks:

i. Individual performance in the labour market (poor careers will result in poor pensions, as pension benefits are computed on the basis of contributions accrued);

ii. Systemic performance (notional returns on contributions in the Italian NDC system are set equal to the five-year moving average of nominal GDP growth)[3].

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[1] The *Assegno sociale* (social allowance for the elderly) and the *Pensione di cittadinanza* (the name the *Reddito di cittadinanza* acquires when all members of the recipient household are older than the Standard Pensionable Age) are means-tested benefits like the *Integrazione al Trattamento Minimo*, but unlike the latter are awarded to the poor elderly in general, not specifically to pensioners.

[2] As observed in the Analysis Report, according to our simulations, by 2040, the vast majority of new pensioners will compute their pension benefits exclusively according to NDC rules.

[3] Other NDC schemes (the Swedish one, for instance) employ average salary growth as the reference for notional returns.

Concerning point i, we have examined the evolution of 'in-work poverty' across the simulation period in T-DYMM's Baseline scenario. According to the Eurostat definition (as mentioned in section 1.1), the working poor are defined as employed individuals whose equivalised disposable income is lower than the poverty threshold, as set at 60% of median income. Figure 3.1 illustrates the evolution of the quota of the working poor across the simulation period differentiating by age class. The relative disadvantage of younger workers is well visible and stays quite constant over time. Such disadvantage reverberates on living conditions as it manifests during working years, and it is also bound to have an impact on eventual pension amounts.

Figure 3.1   Share of working poor on overall workers by age-class, baseline scenario (2016-2070)
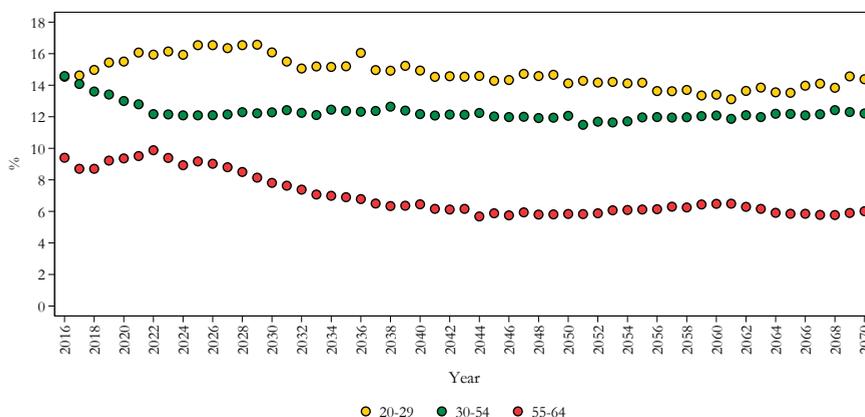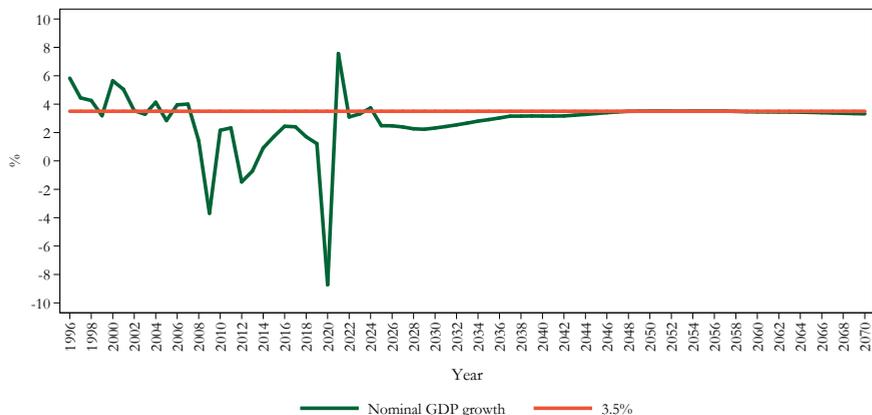

Source: T-DYMM, own elaborations

Concerning point ii, figure 3.2 illustrates the series of nominal GDP growth rates in the simulation period 1996-2070 in comparison to a 3.5% benchmark, which is the implicit assumption underlying the structure of the Italian NDC[4]. It is apparent that a nominal growth equal or above 3.5% is not the norm in the examined period, the average being at 2.9%.

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[4]   Long-term projections for Italy are 1.5% for real growth and 2% for inflation. Under these assumptions, the 'discount rate' (which translates into an anticipated return for pension benefits) has been set to 1.5% when the NDC scheme was introduced (see table A of Italian Law n. 335/1995). For a discussion on the peculiar choice made for the indexation rule in the Italian NDC scheme, see Gronchi, Nisticò and Bevilacqua (2019), The Italian NDC Scheme: Evolution and Remaining Potholes, in *Progress and Challenges of Nonfinancial Defined Contribution Pension Schemes. Volume 1,* World Bank, pp.73-89.

Figure 3.2   Nominal GDP growth rates, baseline scenario (1996-2070)

Note: macroeconomic assumptions are aligned to the AWG projections underlying the 2021 Ageing Report.
Source: T-DYMM, own elaborations

The spirit of our proposal is that, within a certain limit, the policy maker sets to relieve workers of (individual and systemic) underperformance risks. In Policy option B, parallel to the actual NDC pension, a Guaranteed Pension is computed. For each month of work, actual contributions are paid out on the basis of the labour income according to a category-specific contribution rate, while guaranteed contributions are paid out based on the same contribution rate and a 'minimum salary'[5]. Annual returns awarded on contributions accrued for the PdG do not follow nominal growth and are set at 3.5% each year.

Following this logic, like the actual NDC pension, the PdG pension is still a function of the number of years of contribution and of life expectancy at retirement (the conversion coefficient applied is the same), but for each year of work, a minimum salary and a minimum return rate (instead of the actual salary and the actual notional return rate) is considered for the computation of the Guaranteed Pension. If workers experience protracted periods of low labour income and/or low nominal GDP growth, at the end of their careers, the PdG will be higher than the actual pension, and they will receive the higher benefit.

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[5]   For 2016, i.e., the first year of the simulation, this amount is set at € 15,000, 60% of median labour income for the same year according to INPS data. Like other parameters in the simulation, this 'minimum salary' is updated annually following nominal GDP growth. For every year worked as part-time, the 'minimum salary' is reduced by 33%, as ISTAT data shows that is the usual reduction in terms of hours worked for Italian part-time workers.

A potential concern is that Policy option B might produce an incentive to declare lower incomes than actually earned, therefore paying lower contributions while still accruing the same rights in terms of PdG. This is also true for the *Integrazione al Trattamento Minimo* briefly referenced above, as this latter too is paid out to meet a 'minimum' threshold amount, regardless of the amount of the 'earned pension' (the one computed based on the actual working history). A way to address this issue would be to introduce an incentivising mechanism such as the one implemented for the United States' 'Earned Income Tax Credit' (EITC)[6], whereby individuals would still receive some additional amount to their pension if the earned NDC pension was above but close to the PdG amount, in order to minimise the disincentive to contribute. Since T-DYMM does not account for behavioural responses to intertemporal labour supply decisions, this last addition was not tested in the simulations presented below.

3.2 Results

3.2.1 Outcomes on target population

Let us first examine the impact of the proposed policy change on income maintenance upon retirement (measured here as the gross pension/*trattamento minimo* ratio) by typology of work (contractual arrangement) across birth cohorts (table 3.1).

Table 3.1 Condition at retirement (Gross pension/*trattamento minimo**) by birth cohort and contractual arrangement

Birth cohort	Open-ended		Fixed-term		Self-employed	
	Baseline	Policy option B	Baseline	Policy option B	Baseline	Policy option B
1960-1964	2.8	2.8	0.5	1	1.3	1.4
1965-1969	2.6	2.6	0.7	1	1.3	1.4
1970-1974	2.5	2.5	0.8	1	1.3	1.7
1975-1979	2.4	2.4	1	1.3	1.3	2
1980-1984	2.4	2.4	1.2	1.5	1.4	2.1
1985-1989	2.4	2.4	1.1	1.4	1.4	2

Note: workers are assigned to a contractual arrangement if they have spent at least 80% of their careers in it; *median.
Source: T-DYMM, own elaborations

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[6] See: <https://www.irs.gov/credits-deductions/individuals/earned-income-tax-credit-eitc>.

Employees with open-ended arrangements are seldom working below the poverty line, therefore Policy option B does not have a visible impact on their benefits at retirement, while employees with fixed-term contracts and self-employed workers would see their pensions significantly augmented. Because Policy option B only impacts workers fully enrolled in the NDC scheme, only younger workers are affected by it[7].

Tables 3.2 and 3.3 look at the same statistics as table 3.1 but differentiating respectively by gender and educational attainment. As expected, females and lowly educated individuals, i.e., more fragile workers, are more significantly impacted by Policy option B.

Table 3.2   Condition at retirement (Gross pension/trattamento minimo*) by birth cohort and sex

Birth cohort	Female		Male	
	Baseline	Policy option B	Baseline	Policy option B
1960-1964	1.9	1.9	2.6	2.6
1965-1969	1.8	1.9	2.4	2.4
1970-1974	1.7	1.9	2.5	2.5
1975-1979	1.7	2	2.3	2.4
1980-1984	1.8	2.1	2.4	2.4
1985-1989	1.8	2	2.4	2.5

Note: *median.
Source: T-DYMM, own elaborations

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[7] As shown in section 1.1, fixed-term employment has been gaining prominence in the recent past and according to T-DYMM's simulations, its incidence will increase in the future. For older cohorts, a strong incidence of fixed-term employment is usually paired with low-income histories, but for younger cohorts, long fixed-term careers are not projected to be as unfortunate. For these reasons, Policy option B produces a visible effect on older cohorts already.

Table 3.3   Condition at retirement (Gross pension/*trattamento minimo**) by birth cohort and educational achievement

Birth cohort	Lower than university degree		University degree	
	Baseline	**Policy option B**	**Baseline**	**Policy option B**
1960-1964	2.2	2.2	3	3
1965-1969	1.9	2	2.8	2.8
1970-1974	2	2.1	2.6	2.6
1975-1979	1.8	2.1	2.5	2.5
1980-1984	1.9	2.2	2.5	2.5
1985-1989	1.9	2.1	2.5	2.5

Note: *median.
Source: T-DYMM, own elaborations

Figures 3.3 and 3.4 compare replacement rates and gross pension/*trattamento minimo* ratios for all pensioners across the two scenarios. Under Policy option B, the decrease in both indicators is less pronounced over the simulation period *vis-à-vis* the Baseline.

Figure 3.3   Gross replacement rate at retirement
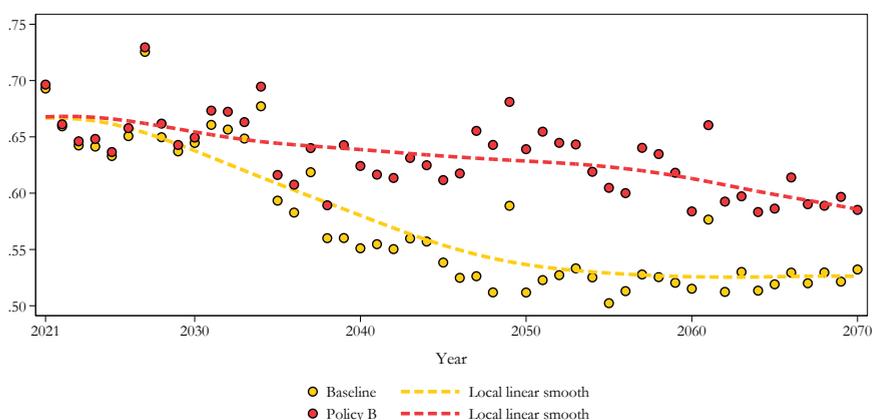
Source: T-DYMM, own elaborations

Figure 3.4   Gross pension on *trattamento minimo* at retirement
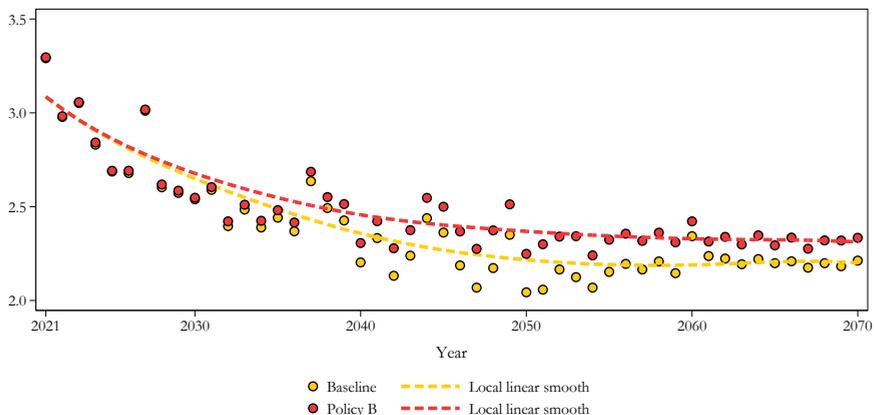
If we look at the Aggregate Replacement Ratio (ARR)[8] by gender (figure 3.5), we notice once again that it is the pensions of female workers that are mostly impacted by Policy option B.

As a result, figure 3.6 shows how in the Policy option B scenario the gender gap is expected to decrease more than in the Baseline.

Figure 3.5   Aggregate Replacement Ratio (ARR) by sex

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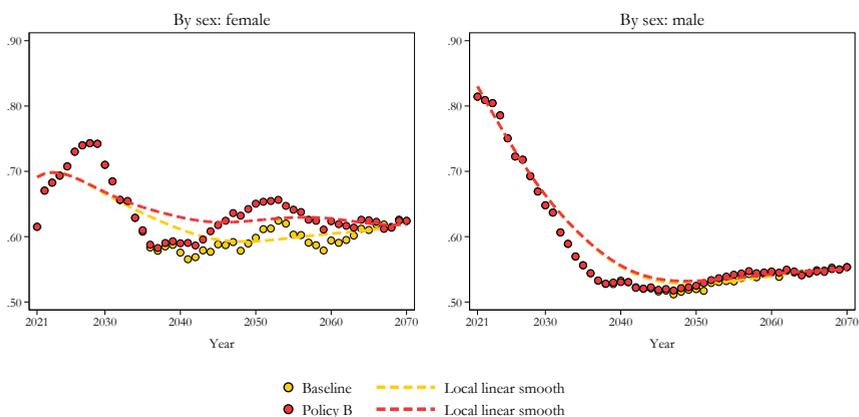
[8]   The ARR is the ratio of the gross median individual pension income of the population aged 65-74 relative to the gross median individual labour income of the population aged 50-59, excluding other social benefits. It takes into account old-age/seniority, inability and survivor pensions.

Figure 3.6 Gender Gap in Pensions (GGP)
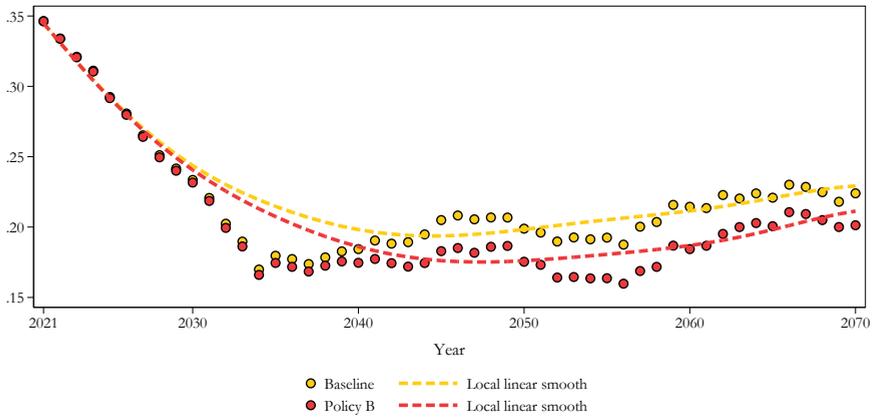
Figure 3.7 shows that the Gini index for the stock of old-age and seniority pensions is projected to decrease significantly more in the Policy option B scenario. As already shown in the Analysis Report (section 3.3), the 'equalization effect' (around a lower average public pension) brought about by NDC rules is already strong in the Baseline scenario alone.

**Figure 3.7 Gini index on stock of old-age and seniority pensions**
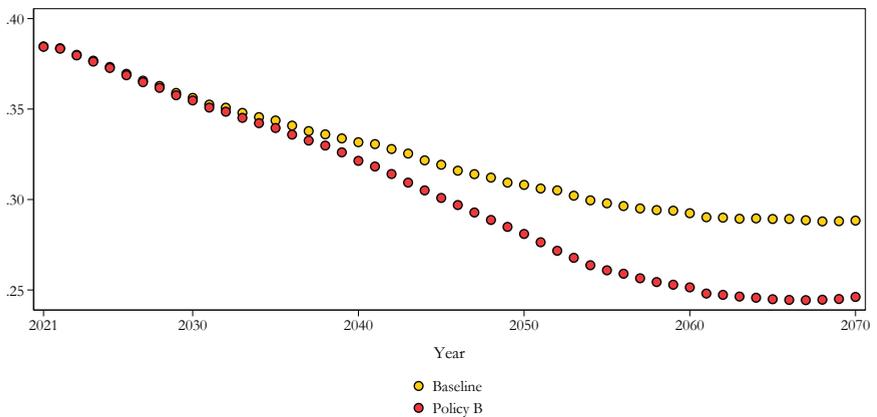
Note: gross pension amounts are taken into account.

3. Policy option B: a minimum pension for NDC workers

3.2.2 Poverty and inequality indicators

Figure 3.8 illustrates the evolution of the incidence and intensity of poverty for the elderly population by gender. Interestingly, while Policy option B decreases the AROP rate, it increases the income gap ratio: since the PdG is destined to individuals who are already entitled to a pension benefit, they are likely to be (if poor, at least) close to the poverty line in the Baseline. While they will be pushed over the threshold thanks to the PdG, thereby increasing median income in the process, the poorest among the elderly will receive none of the profits of the PdG, since they were not entitled to a pension benefit in the first place, and they will end up comparatively poorer (the income gap increases).

Figure 3.8 Headcount ratio and income gap ratio of equivalised disposable income by sex for the elderly population (SPA and over)
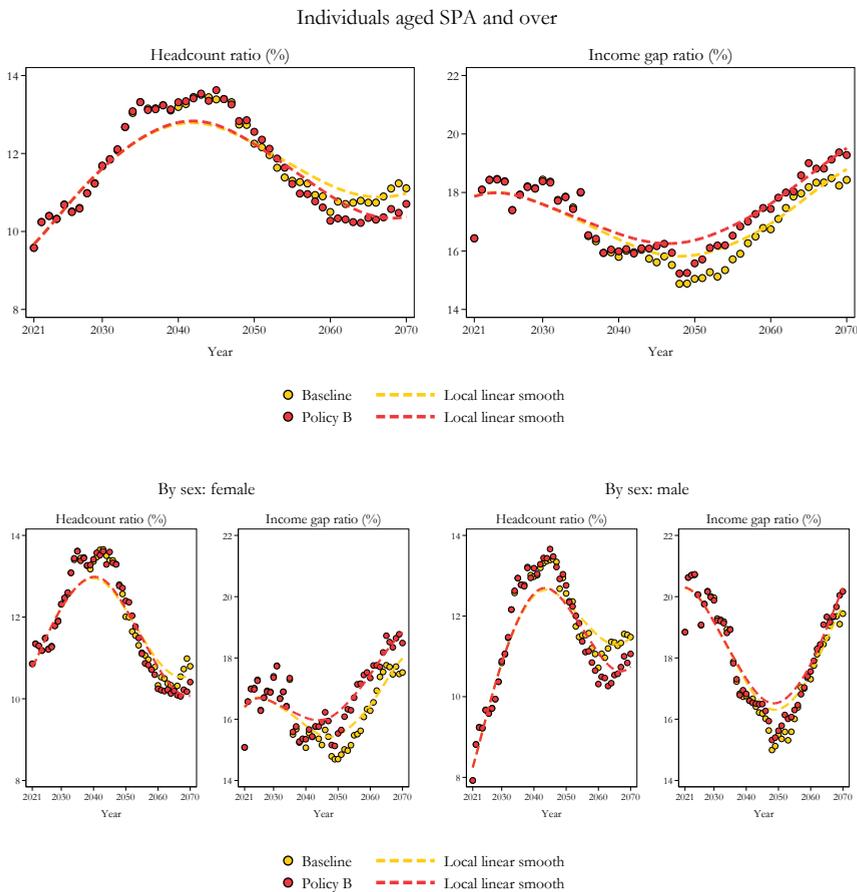
Source: T-DYMM, own elaborations

Figures 3.9 and 3.10 illustrate the impact of the Policy option B on a dashboard of inequality indicators by aggregation of income quartiles. The interpretation of results follows a similar logic to the one proposed for poverty indicators. For the lowest income quartiles, it is the wealthier individuals (who were entitled to a pension in the first place) who are affected by the policy and receive higher pensions, thus increasing inequality within their group[9]. For the higher income quartiles, it is the poorer individuals who are impacted by the policy, thus reducing inequality within their group.

Figure 3.9   Inequality indicators of equivalised disposable income for the 1st and 2nd quartile combined for the elderly population (SPA and over)
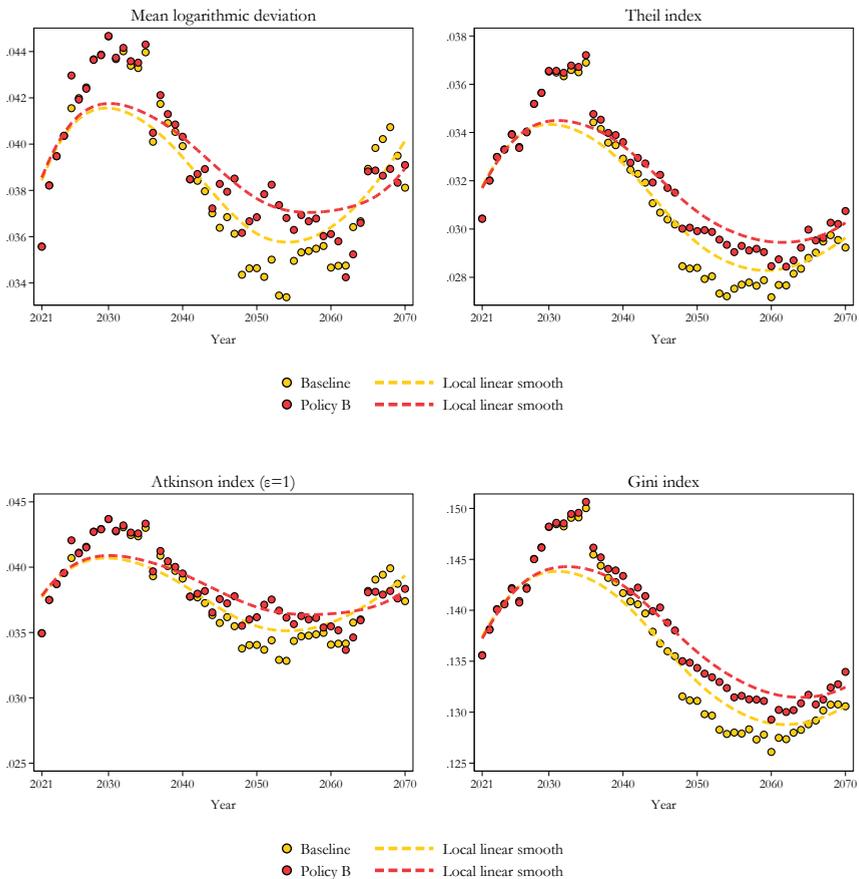
Source: T-DYMM, elaborazioni proprie

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[9]   For the lower quartiles, the indication of inequality indicators is not unequivocal. The reasoning behind having a dashboard of indicators, however, is precisely to derive an overall indication.

Figure 3.10 Inequality indicators of equivalised disposable income for the 3rd and 4th quartile combined for the elderly population (SPA and over)
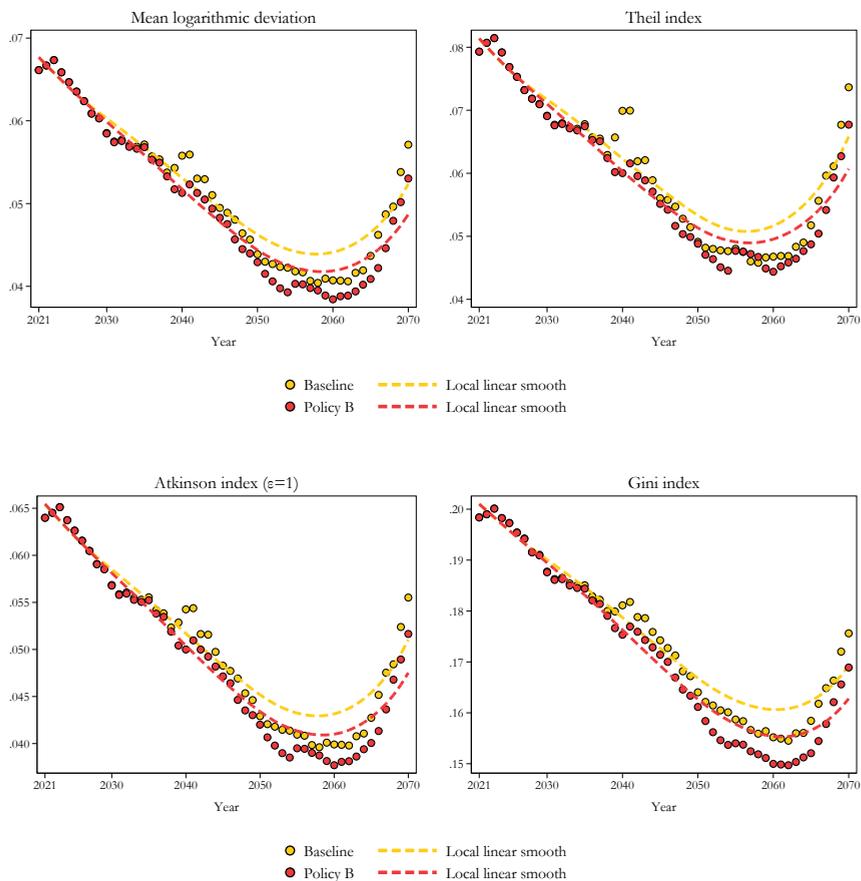
Figures 3.11 displays trends in income inequality for individuals aged over the Standard Pensionable Age as measured by the Gini index. The overall impact in terms of income inequality produced by Policy option B is limited, goes in the expected direction (inequality is overall reduced) and is more visible for elderly males, as females are less likely to be entitled to work-related pension benefits in the first place. Results for S80/ S20 and especially S90/S10 show how the biggest change in inequality concerns the central part of the income distribution.

Figure 3.11 Gini index of equivalised disposable income by sex for the elderly population (SPA and over)
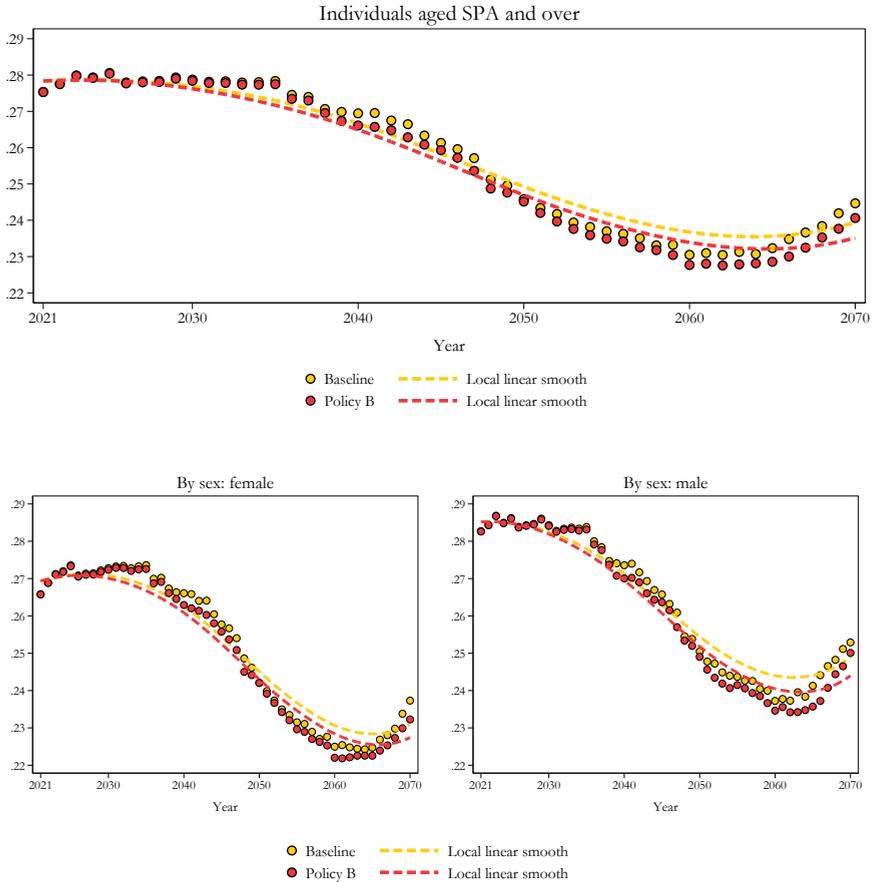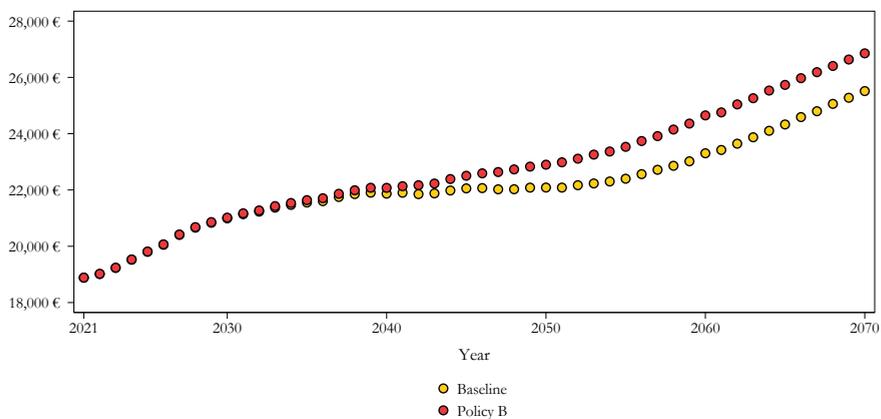

Source: T-DYMM, own elaborations

3.2.3   Impact on expenditure levels

As a further level of analysis, we shall focus on the expenditure side of our policy proposal. In Policy option B, average work-related pensions are a little higher than in the baseline scenario. Figure 3.12 illustrates the evolution of this average across the simulation period discounting by CPI growth. By 2070, the average gross pension would be 5.3% higher in the Policy option B scenario compared to the Baseline.

**Figure 3.12 Average gross old-age and seniority pensions**

Note: figures are presented in 2021 monetary values.
Source: T-DYMM, own elaborations

Finally, figure 3.13 illustrates the evolution of pension expenditure across the simulation period. Figure A excludes expenditure on old-age social allowances (*assegno sociale*) and old-age citizenship income (*pensione di cittadinanza*), while figure B includes it. In both instances, differences in expenditure are visible but rather limited and the decreasing trends of the aggregates are kept intact. If *assegno sociale* and *pensione di cittadinanza* are excluded from expenditure amounts, the overall increase in the simulation period is about 1.9%. If *assegno sociale* and *pensione di cittadinanza* are included, the increase is reduced to 1.6%, essentially due to the reduction in expenditure on the *assegno sociale* (by 1.9%). The substitution effect between the PdG and the *assegno sociale* or the *pensione di cittadinanza* is limited, as the former is not designed to protect the elderly from poverty, but rather to ensure higher income maintenance after retirement.

Figure 3.13 Social expenditure index for the elderly population

a. Excluding *assegno sociale* **and** *pensione di cittadinanza*
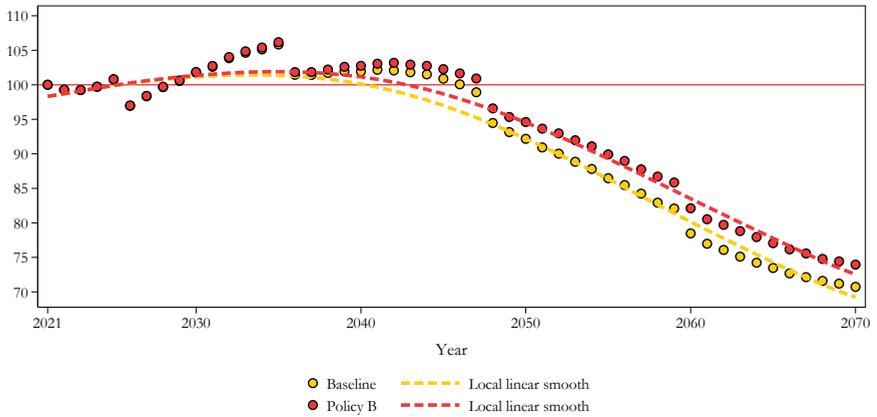
b. Including *assegno sociale* **and** *pensione di cittadinanza*
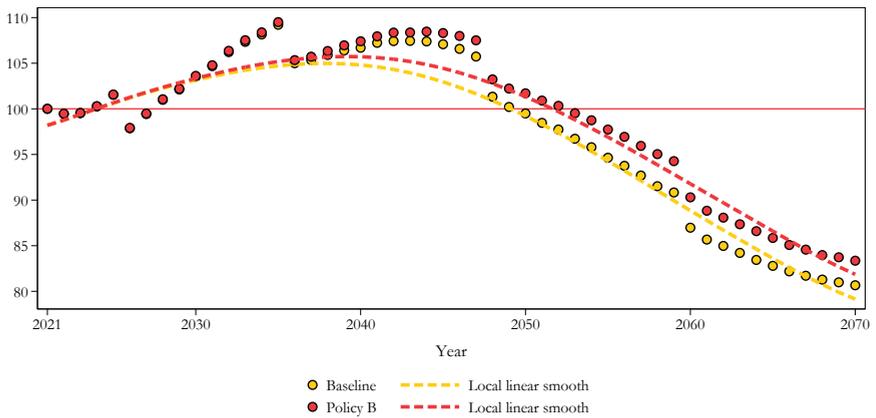
Note: values are discounted to year 2021 using the nominal GDP growth rate. The base index value is 100 and stands for social expenditure for the baseline scenario in 2021. Social expenditure includes pension benefits, unemployment benefits, family allowances, minimum income benefits and child benefits (*assegno sociale* and *pensione di cittadinanza* are excluded in figure A). See table 2.14 in the Analysis Report for a detailed description of social assistance simulated benefits.
Source: T-DYMM, own elaborations

4.   Policy option A and B combined

In this final section, we briefly present results for both policy options A and B combined. Because the latter is larger in scope, most of the combined effect is driven by Policy option B.

4.1   Poverty and inequality indicators

Let us first explore poverty indicators in figure 4.1. Overall, policy options A and B produce a limited but visible effect on the At-Risk-Of-Poverty-Rate and on the Poverty Gap. For the elderly, the effect is nearly identical to the one observed above for Policy option B alone. Interestingly, for active individuals, by increasing median income, the introduction of Policy option B would result in higher relative poverty (as measured by the headcount ratio), while the income gap ratio would slightly reduce, as more people would be close to the newly increased poverty threshold. The convergence of poverty levels between active and elderly people visible in the Baseline results would therefore be somewhat diminished by the implementation of Policy options A and B, by virtue of the latter.
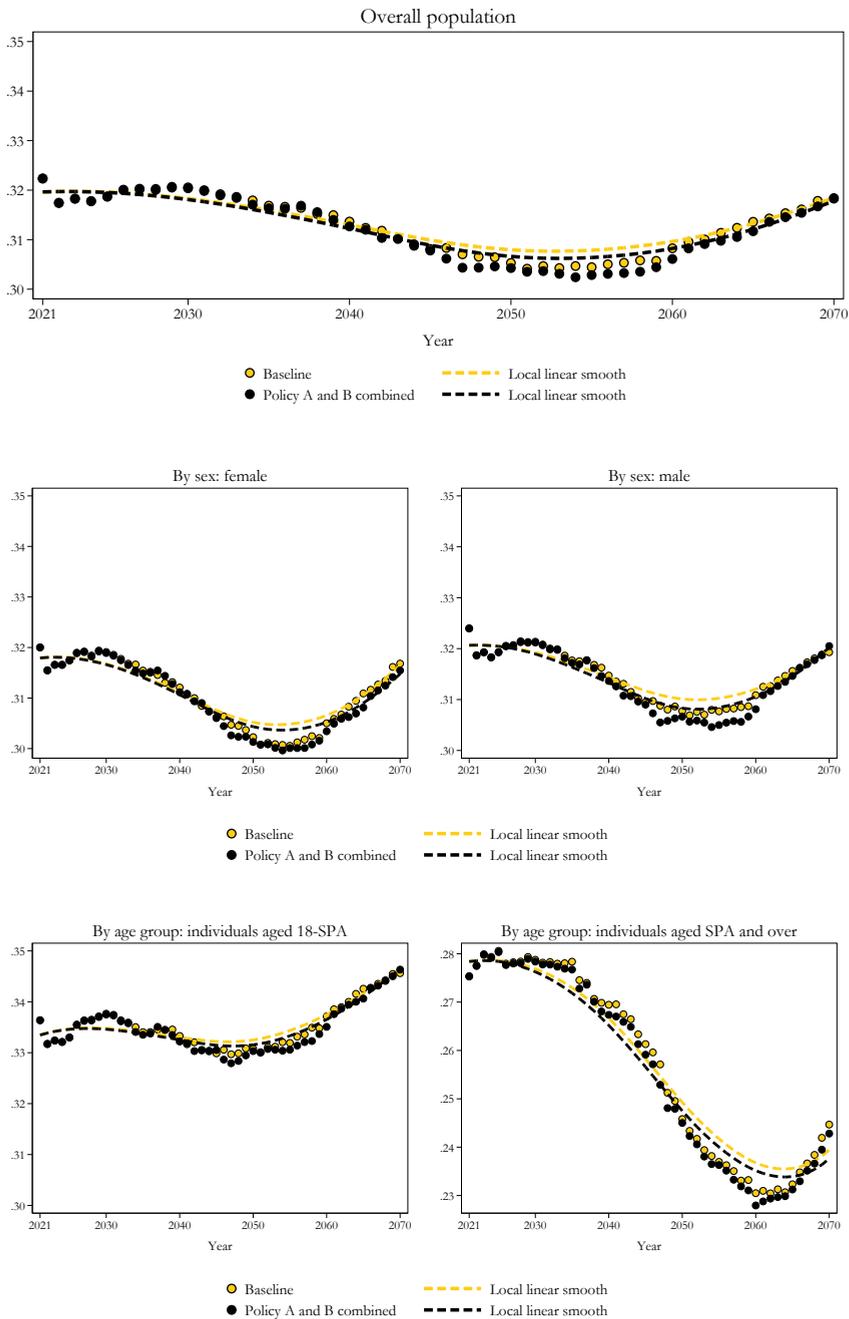
Expectedly, effects of the policies on inequality levels on the overall population are almost null. Gini (figure 4.2) shows more visible results for males and elderly people, as already illustrated for Policy B alone.

Figure 4.1 Headcount ratio and income gap ratio of equivalised disposable income by sex and age group
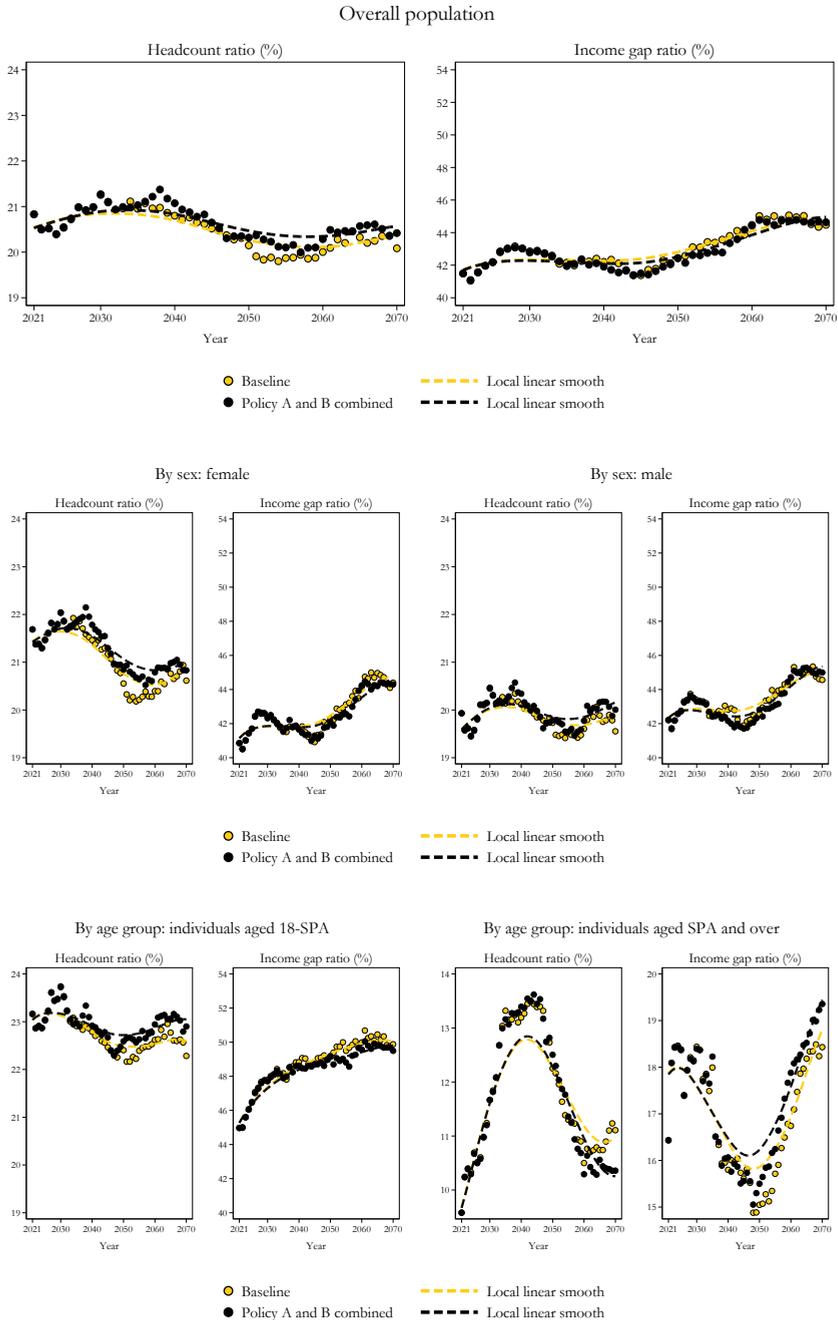
Source: T-DYMM, own elaborations

Figure 4.2 Gini index of equivalised disposable income by sex and age group

Overall population

By sex: female

By sex: male

By age group: individuals aged 18-SPA

By age group: individuals aged SPA and over

Source: T-DYMM, own elaborations

4.2 Impact on expenditure levels

Impacts on expenditure levels are overall contained (figure 4.3) and, as observed for Policy option B, only emerge starting from the 2040s, when the decreasing pattern of the trend has established.

Figure 4.3   Social expenditure index for the overall population
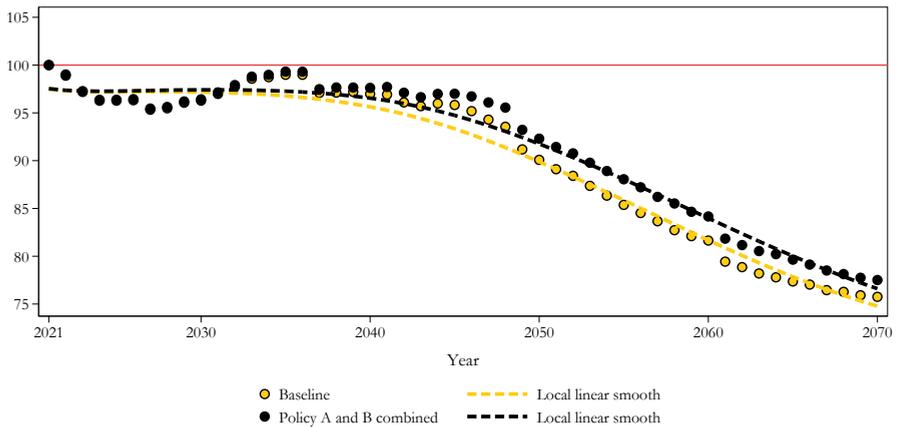
Note: values are discounted to the year 2021 using the nominal GDP growth rate. The base index value is 100 and stands for social expenditure for the baseline scenario in 2021. Social expenditure includes pension benefits, unemployment benefits, family allowances, minimum income benefits and child benefits. See table 2.14 in the Analysis Report for a detailed description of social assistance simulated benefits.
Source: T-DYMM, own elaborations

Conclusions

The first section of this report has presented some descriptive evidence about Italian fragile workers dedicating a specific attention to platform ones. It discusses the risk faced by workers with discontinuous carriers, self-employed and platformer workers, of reduced access to the social protection system. Starting from the measures put in place to deal with the difficult crisis deriving from Covid-19, the analysis suggests the necessity of a revision and an extension of social protection system to support more fragile workers.

Building on the analysis carried out by INAPP and by the relevant innovations introduced in the third version of T-DYMM – presented in the second and third MOSPI reports – the following sections have tested two policy options. Policy option A attempts to strengthen the welfare system for active individuals who cannot find an occupation, increasing coverage of unemployment benefits (especially for the self-employed, with the introduction of the ISCRO 2.0) and extending the payment of figurative contributions in all cases when allowances are paid out. Policy option B intervenes directly on pensions for NDC workers and corrects benefit amounts in cases where individuals are in fact able to work, but throughout their careers have not been remunerated enough and/or have lived through times of low economic growth, thus cannot earn a sufficiently high pension benefit on their own.

Policy option A would increase equality amongst the unemployed, as the self-employed would be entitled to an (albeit small) allowance in case of loss of job and/or very low income. It would have a limited but visible effect on poverty for both the target group (unemployed and self-employed) and for active people as a whole. Effects on inequality indicators for active people would be smaller and impacts on pension levels due to the additional figurative contributions would be nearly null. Additional revenues from Policy option A would be much higher than the expenditure, suggesting that the additional contribution established by ISCRO regulations (only available to VAT ID holders) would be excessively high in the context of our ISCRO 2.0 (available to all self-employed workers). Furthermore, the ISCRO 2.0 would also decrease access to other social safety nets, resulting in a minor overall increasing in social expenditure.

Policy option B has a visible impact on the pensions of fragile workers (fixed-term employees, self-employed workers, women, lowly educated individuals) born after 1970, thus fully enrolled in the NDC scheme, and on overall values, mitigating the effect of the transition from Defined Benefit to Notional Defined Contribution rules. The gender gap in pensions would decrease more than in the Baseline scenario. The poverty risk for the elderly would decrease, but the poverty gap would increase, as the poorest would not be impacted by Policy option B, since they do not meet requirements for a pension benefit in the first place. For the same reason, while inequality overall decreases, it increases within the lower quartiles of the income distribution. Pension expenditure and social expenditure for the elderly would be slightly higher under Policy option B, with limited substitution effect between the Guaranteed Pension (PdG) and social allowances or minimum income measures, as the former is not designed to relieve the poor, but rather to insure higher income maintenance to pensioners in an NDC framework. Higher expenditure levels would only emerge in the 2040s, when the decreasing trend is well established.

When Policy options A and B are considered together, most of the effect is driven by the latter, which is larger in scope and in expenditure levels. Interestingly, because Policy option B significantly improves the position of pensioners, median income is pushed up and active people (who do not receive pensions) are worse off compared to the Baseline scenario in terms of indicators of relative poverty. While future pension levels are a valid concern, effective policies on the side of the labour market (especially in an NDC framework) would address the issue while also improving conditions for active people.