
Research article

Post-pandemic scenarios. The role of the Italian National Recovery and Resilience Plan (NRRP) in reducing the gap between the Italian Central-Northern regions and Southern ones

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Abstract: The Covid-19 pandemic and the Ukraine crises fit into the difficult Italian context, which have already been marked by a deep socioeconomic gap between the Centre-North and the South of the country. After a brief examination of the causes that have led to this gap, starting from the analysis of geographical studies on the subject and elaborations of data provided by important research centres in the field, this study aims to point out the sectors of Southern Italy present greater criticalness and backwardness compared to the rest of the country. Then, we identify the most suitable programmatic lines to increase investments in such sectors, as already provided for the Italian National Recovery and Resilience Plan (NRRP—in Italy PNRR), a program with which the government intends to manage Next Generation EU funds or NGEU (the economic recovery and revitalization tool introduced by the European Union to restore the losses caused by the pandemic). The article concludes with a reflection on the main reasons for the difficulties that the NRRP is encountering by implementing this program, mainly related to the insufficient allocation of resources and competencies of the territorial authorities that are entrusted with the task of managing and planning policies to rebalance the country’s growth potential.

Keywords: next Generation EU; NRRP; North-South Italy gap; investment; post-pandemic

1. Introduction

With the eastward enlargement of the European Union (EU), the Mediterranean states, including Italy, are losing weight in EU decision-making processes, and have seen their socioeconomic growth slow down compared to the Central-Northern member states, as well as new entrants. At the Italian level, the differences became more pronounced when the more industrialized areas of Northern Italy relocated production abroad, thereby abandoning the South, which was less competitive in terms of costs and taxation, as well as the efficiency of production flows. Alongside this scenario came the Covid-19 pandemic crisis, followed by the crisis emerging from the conflict in the Ukraine. Thus, in 2022, there was a gradual worsening of growth forecasts and labour market prospects due to inflation, the energy crisis, and the change in the direction of international monetary policies. The EU unveiled the *REPowerEU* contingency plan for independence from Russian gas supply by 2030, thereby accelerating the ongoing energy transition [1].

However, compared to the European area, Italy is not in a negative growth differential, thanks in part to the strengthening of economic activity related to the post-pandemic reopening policy, the recovery of the construction market and the gradual strengthening of the public works sector. Moreover, the Italian industry seems to have held up substantially, showing an ability to reorganize its business even in extremely difficult phases, such as during the Covid-19 pandemic and in phases of supply chain disruption.

The National Recovery and Resilience Plan (NRRP) is part of the Next Generation EU (NGEU) programme, which provides EUR 750 billion in aid, about 50 % of which consists of subsidies provided by the EU to cope with the consequences of the pandemic crisis. The NGEU programme is based on the Recovery and Resilience Facility (RRF), which provides EUR 312.5 billion in the form of grants and EUR 360 billion in the form of low-interest loans, with a total value of EUR 672.5 billion over the six-year period from 2021–2026.

The Recovery and Resilience NRRP presented by Italy consists of a major package of reforms to be financed by EUR 191.5 billion of resources ensured by the RRF and by EUR 3.6 billion provided by the Supplementary Fund established by Decree-Law No. 59 of 6 May 2021, as per the multi-year budget variant approved by the Italian Council of Ministers on 15 April 2021. The total amount of the planned funds is EUR 222.1 billion. In addition, a further EUR 26 billion has been earmarked for the realisation of specific works and the replenishment of resources for the Development and Cohesion Fund by 2032. Thus, in total, approximately EUR 248 billion will be available. Additionally, more resources will be made available by the Recovery Assistance for Cohesion and the Territories of Europe (REACT-EU) programme, to be spent in the years 2021–2023 in accordance with EU regulations [2].

Even in the years when federal reform was being attempted, the relationship between the State and the Regions in Italy was analysed. It had obvious shortcomings, both in vertical relations, due to a weak coordination between the two levels of government and the limited involvement of the regions in the governance structure, as well as in horizontal relations between the regions, which suffered from competitive pressures aimed at defending differentiated regional interests based on the North-South cleavage [3].

Other studies analysed the causes of the gap between northern and southern Italy prior to the outbreak of the pandemic, emphasising the role played by labour productivity and employment in unequal growth [4,5].

The cultural distinctions between the various Italian regions, which have their roots in the different events experienced in past centuries, degenerated into systematic inequalities after the unification of Italy in the second half of the nineteenth century and during the country's industrial development; these were amplified during the various stages of the country's productive growth and ushered in a dual development model. Even during the phase in which the society and the Southern economy underwent evident transformations; these changes did not correspond to an evolution of the situation of the South as compared to the progress made by the Centre-North of Italy. Even some extraordinary interventions did not achieve the hoped-for effect of attenuating the gap between the North and the South of the country due to a fragmented vision, lacking ideas of strategic development for the South. A new obstacle in recent years has been the so-called "Northern question", which aims to revive the economic initiative of the productive categories in northern Italy, with the effect of further increasing Italian economic dualism [6,7].

Moreover, the cuts in public spending on social services—especially for early childhood and elderly care—have accentuated the already existing territorial disparities [8].

For Italy, the programmatic objectives and the size of the RRF aid, as well as the control mechanisms imposed to be eligible for aid, constitute an unmissable opportunity to stimulate economic growth and support the green and digital transition and, above all, reduce the gap between Northern and Southern parts of the country. For the first time in the history of national funding programmes in a Community context, the NRRP constitutes a genuine transformative project with allocations of resources aimed at the effective and verifiable implementation of those reforms needed to overcome the barriers and structural weaknesses that have held back the development of public and private investment over the past decades, slowing down national growth and leading to unsatisfactory employment levels, especially for young people and women. For these reasons, this research focused on the NRRP, rather than other programs. However, as will be seen during this analysis, several uncertainties remain in relation to the ability to carry out the initiatives of the NRRP, respecting its timelines, and without altering the quality of the measures, a condition for them to impact medium-term growth through productivity gains [9].

Starting from these considerations, this paper aims to point out the sectors in Southern Italy that present more critical issues and backwardness compared to the rest of the country; additionally, the need to increase the investments already included in the NRRP is stressed. As will be seen, the issue is by no means easy, since the territorial gaps are twofold. On the one hand, the need to improve the quality of public services and social infrastructure emerges; on the other hand, the qualitative-quantitative divide between regional production systems must be recomposed, valuing the Southern contribution for the nation's growth. Regarding overcoming the North-South gap, the most innovative aspect of the NRRP consists of the establishment of a "Design and Ideas Competition Fund for Territorial Cohesion" to promote initiatives with this scope, in particular, the areas in need of urgent and radical interventions. On the initiative of the Presidency of the Council of Ministers, with the participation of the Ministry of the Economy and Finance, the "Capacity Italy" portal was set up to support the public administration in the implementation of the NRRP, with the operational technical support of experts from Cassa Depositi e Prestiti, Invitalia, and Medio Credito Centrale. This is a desk

aimed at technical and administrative personnel concretely engaged in the implementation of the NRRP to provide answers regarding all phases of project implementation (i.e., from the drafting of calls for tenders to the reporting and monitoring phases), in accordance with the indications agreed by the Government with the European Commission (EC). Having finally acknowledged the chronic lack of competence and efficiency of the Italian public administration and of the territorial bodies of the South, focusing on concepts such as digitalization, simplification and transparency implemented through innovative methods and tools can finally allow for a quality leap of our administrative machine that has, so far, been incapable of accompanying growth initiatives; this restores a leading role to the bureaucracy, making it abandon its atavistic task of a bottle-neck with veto power to be overcome by circumventing its control prerogatives [10].

Taking due account of the inefficiencies that the Italian administration has shown on many past occasions that have led to a waste of public resources, almost always producing “cathedrals in the desert”. It is evident that with their huge resource allocations and spending reserves, which are accounting favourable, the NRRP initiatives are only necessary, but not sufficient, conditions for closing territorial gaps in citizenship rights, rebalancing the growth potential between the southern part of Italy and the central and northern regions, not only for the rest of Italy, but also other economically richer European countries [11].

The pandemic crisis has found an Italian situation where 10% of the southern population lived in absolute poverty, against 6% in the central and northern areas. The Gross Domestic Product (GDP) per capita was markedly unbalanced, causing real and perceived levels of inequality to continue to worsen (Figure 1). The gap between the South and the Centre-North could be fully assimilated to the Centre-Periphery model: market-induced inequalities were aggravated by the prevalence of inadequate private welfare.

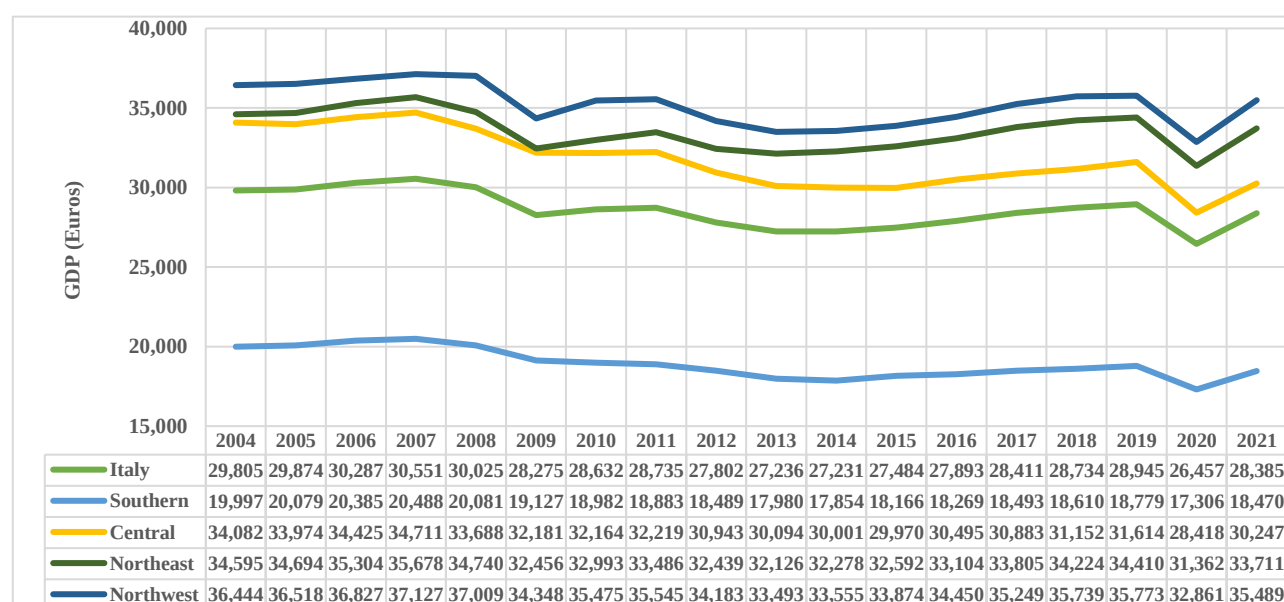


Figure 1. GDP per capita (euro, chain-linked values—reference year 2015) [12].

Some geographic studies [13] have stressed the importance of an agency approach to promote territorial resilience and the construction of new growth models. An important role would be played by

the involvement of local communities and digitalization that opens new development opportunities even for the most fragile regions, supporting specific intervention actions to promote territorial resilience.

2. Background

2.1. North-South Economic Growth Differentials

Compared to the northern regions, the backwardness of southern Italy is, in part, due to national policy that, in the second half of the 1900s, favoured the development of the already richer and more industrialized regions in the North and Centre. A corrective action to this situation could have been provided by membership in the EU, which was intended to narrow the economic gap between areas and improve employment and social equity; however, the Union's subsequent eastward enlargement diverted attention and resources to the new entrants. Italy's backwardness affects not only its Southern regions, but the entire country: the national society and economy are characterized by a "double gap" that distances the South from the rest of the country, and Italy from the rest of Europe.

In the period between the end of the last century and the pandemic crisis, there is evidence of a trend growth in per capita income in Northern Europe and substantial resilience in the economies of Central Europe, while Mediterranean Europe, including Italy, suffered a decline in economic levels.

With the new century, an almost uninterrupted series of periods of crises has aggravated the conditions of the production system, especially in southern Italy, with the sole exception of the agribusiness and tourism sectors of excellence. As is well shown in the graphs below with reference to the first 20 years of the 21st century, the project of harmonious and balanced development of the EU failed, also due to a lack of coordination between fiscal and monetary and budgetary policies established by the European Central Bank Governing Council. With the aim of countering any inflationary pressures and ensuring price stability in accordance with the so-called German-inspired expansive austerity policy, there lacked investment and funding where it was needed for the qualitative adaptation of the business, industrial and administrative environments. This has led to a contraction in the number of industrial activities and a reduction in employment levels, partly due to misguided policies of regional autonomy allowed by the EU principle of subsidiarity.

While Eastern European regions have come closer to the standard of living of Western European regions, as favoured by derisory labour costs and tax regimes compared to ours, Italy has lost competitiveness compared to other European nations. The policies of recent Italian governments have failed to meet the expectations of the people, particularly those in rural regions and industrial hubs in the South, who are seeing declining per capita income and increasing underground economy and high levels of tax evasion. Patronage politics has favoured "piecemeal" interventions instead of encouraging integrated and coherent projects aimed at growth, creating high public debt. This has disincentivized the entrepreneurial initiative, fostering unemployment and "brain drain". In contrast, large cities in Central-Northern Europe have attracted capital and skilled resources, creating employment in the highly specialized advanced service sector.

The emergence of the current integrated and globalized market has not benefited the Italian economy and society. Thus, they have failed to take full advantage of the opportunities offered by the technological and information technology revolution of the new century; therefore, they have not

found an adequate place in the integrated production cycle in the intermodal flow logistics chain. Thus, they have reduced production and income, instead seeing the needs induced by the increasingly dominant growth in consumer culture.

By way of example, in the four-year period between 2015–2018, in which the global economic situation showed signs of improvement, the recovery of the South (Figure 2) -and of Italy as a whole- was slow compared to the stronger economies of the Eurozone, due to low productivity and competitiveness.

To regain an adequate role in this scenario, we need to understand the limitations of our economic and industrial system and remedy them. Especially in comparison to the situation of the industrial districts of the Centre-North and the new European countries (once defined as “emerging”), despite the many cases of entrepreneurial and industrial excellence, the Southern economic reality has long exhibited general conditions of backwardness due to a considerable territorial dispersion of enterprises; therefore, they are unable to play a leading role and create the conditions for the development of an ancillary industry [11]. This situation is aggravated by several factors:

1. Outdated legislative and regulatory framework.
2. Inefficient and unreliable public system, aggravated by a poorly implemented regionalization policy that multiplies waste.
3. Overly burdensome tax system, especially when compared with the poor quality of public services made available, causing high living and labour costs and low levels of employment.
4. Level of education and training that is often inadequate in terms of methods, content, and professionalism of employees.
5. Advanced age of the working population due to low birth rate and low stabilized immigration.
6. Invasive and infiltrated delinquency in the administrative, bureaucratic, and productive apparatus.

Therefore, the recovery of competitiveness of our Southern regions must necessarily pass through an improvement in the quality of national and regional institutions and rules of the government, bringing economic and social conditions into line with those of more advanced Europe. The growth of a nation can only take place organically, subjecting the different components to specific processes according to their real “state of health”, respecting their real shortcomings, needs and peculiar characteristics, abandoning the principle of interventions and aid distributed arithmetically according to number of voters and not according to their needs.

The Italian situation of economic difficulty and imbalance, both with respect to Europe and within it, is provided by the data on employment levels, which mark a clear distinction between a general context of backwardness and some sectors of excellence. The Italian employment rate was 3.5% lower than the EU average (28%), with a decline that mainly affected the youth and skilled labour, while tourism and agriculture recorded the largest increases (+4.5%), also benefiting from the influx of low-cost non-EU labour, as aided by the economic and geopolitical crisis on the southern shore of the Mediterranean.

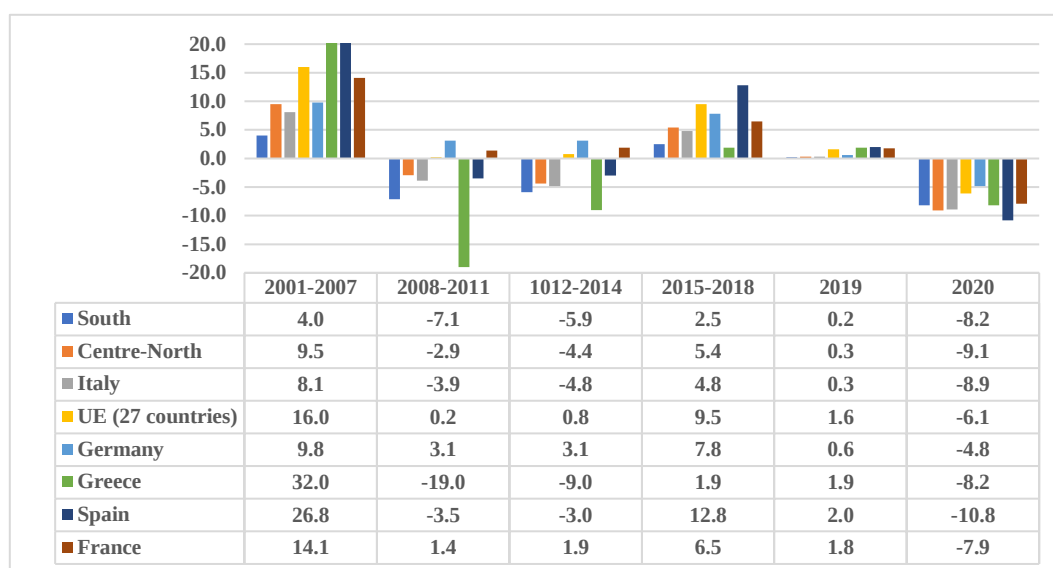


Figure 2. Annual and cumulative GDP growth rates in real terms (%)—Calculated on chain-linked values—base year 2015—Comparison between Italy and some EU countries [11].

During the 2020s, the activity and fall in employment during lockdown were accompanied by a noticeable growth of inactivity. The moderate recovery following the spring 2020 lockdown was largely dampened by subsequent waves of the pandemic and the continuing climate of uncertainty. Beginning in March 2021, labour demand picked up again, with a marked acceleration in the second half of the year. The expansionary dynamic continued in the first six months of 2022, supporting the recovery to pre-crisis levels [11] (Table 1).

Table 1. Employment by activity sector and geographic area. Years 2019/2022 [11].

Geographic Area	Agriculture	Industry			Services			Total
		Total	Manufacturing	Construction	Total	Shops, hotels, restaurants	Other service activities	
Variation 2019–2022 (%)								
South	3,5	7,1	−3,4	29,8	−1,2	−2,5	−0,7	0,7
Centre-	−0,5	2,4	−0,5	14,4	−1,7	−4,2	−0,7	−0,5
Italy	1,4	3,3	−1	18,8	−1,6	−3,7	−0,7	−0,2
Variation 2021–2022 (%)								
South	−2,5	4,4	−0,5	13,2	4,6	10,9	2,1	4,1
Centre-	−7,7	4,6	3,4	8,9	3,4	10,2	1	3,4
Italy	−5,2	4,5	2,7	10,2	3,7	10,4	1,3	3,6

According to the results of the labour force survey, employment grew by 3.6% (+791.000) in 2022 (average of the first two quarters), as compared to the first half of 2021. The acceleration in 2022 brought employment almost to pre-crisis levels (–47,000 units, –0.2% compared to the average of the first two quarters of 2019). The employment rate stood at 59.8%, one point higher than in 2019, reflecting the trend decline in the working-age population. The recovery in employment spread geographically, which was more pronounced in southern regions (+0.7% compared to the first half of

2019 compared to -0.5% in the Centre-North). The employment rate rose 2.1 points in the South to 46.4% and 0.2 points in the Centre-North (66.7%). The growth affected only males ($+0.2\%$), as compared to a moderate decline in female employment (-0.8%) [14].

In 2010, the serious budgetary difficulties of the Italian social security and pension system led to legislative initiatives to postpone the retirement age. This has caused the generational turnover in work to freeze for many years, seriously damaging the younger generations who have, in fact, had a strong delay in accessing work activities. When the prolonged and forced occupation of workplaces by older workers ended rather abruptly, the younger generations found itself massively inserted in the world of work, sometimes with contractual relationships characterised by widespread precariousness. The consequence is that the young population feels the effects of the economic dynamics to a greater extent compared to the adult population, to which a phenomenon of employment instability on a voluntary basis is added, which was never experienced in Italy before the pandemic shock. This has caused a greater decline in youth employment compared to adult employment since the second half of 2020. Between the second quarter of 2021 and the second quarter of 2022, the effects of measures aimed at incentivising the hiring of young people were felt, such as the under 36 hiring bonuses, subsidies for hiring precarious young workers with minor children, the bonus for hiring young people in school-to-work alternation, and the 100% contribution relief for first-level apprenticeships. Compared to 2019, the employment rate for the under-35s rose by 2 points to 43.3%. Substantially similar at the territorial level is the evolution of youth employment over the last three years: the growth in the employment rate is more accentuated in the South because of the demographic decline (-6.1% compared to the average for the first half of 2019) while in the Centre-North the under-35 population remains substantially at the same levels. The employment rate among 15-34-year-olds rises by 2.6 points in the South to 31.4%, more than twice as fast as in the Centre-North regions, which reached 50% ($+1.2$ percentage points) (Table 2) [11].

Table 2. Employment by gender, age group, and citizenship. Changes in years 2019–2022 and 2021–2022 (a) Average of the first two quarters [11].

Area	Total	Male	Female	Age 15–34	Age 35–49	Age > 50	Foreigners	Italians
2022								
Absolute values (x 1000)								
South	6.086	3.832	2.254	1.355	2.340	2.391	317	5.769
Centre-North	16.909	9.455	7.454	3.828	6.543	6.538	2.043	14.866
Italy	22.995	13.287	9.708	5.183	8.882	8.929	2.360	20.635
2019–2022								
Variation (%)								
South	−0,6	−1,4	0,6	1,0	3,3	−3,5	14,1	−1,3
Centre-North	−0,5	−0,3	−0,8	2,6	−6,6	4,4	1,8	−0,8
Italy	−0,2	0,2	−0,8	2,6	−5,7	4,2	−0,1	−0,2
2021–2022								
Variation (%)								
South	4,1	3,9	4,4	8,1	2,2	3,7	1,9	4,2
Centre-North	3,4	3,1	3,8	9,7	0,5	2,9	10,9	2,4
Italy	3,6	3,3	3,9	9,3	0,9	3,1	9,6	2,9

3. Discussion

3.1. Demographic and occupational aspects

In terms of employment flexibility, and with the increased use of fixed-term contracts, the reforms implemented in the post-pandemic phase has increased precariousness in labour relations, especially in sectors more predisposed to agile work such as tourism and those with high digital intensity. The phenomenon has affected women, who are employed more in the service sector, and young people, who are more often employed on fixed-term contracts. Moreover, in 2022, the share of fixed-term employment in the southern regions exceeded the value of Spain, which has historically been characterized by very high values but has implemented policies to reduce their use during the same period. This is due to the development of a new labour market that employs a minority of highly skilled labour and a larger low-productivity segment with precarious, part-time, and often low-wage contracts (Table 3) [15,16]. Abundant job creation in the latter segment has helped drive down unemployment rates, while keeping average wages at relatively low levels. The explosion of involuntary part time contracts (affecting workers who would like to work full time but are unable to find employment more in line with their needs) represents a real “pathology” of the Italian labour market, particularly prevalent in the South, where workers with involuntary part time contracts have risen from 490,000 in 2008 to 870,000 in 2022, reaching 80% of total part time workers. Wages are also too low here: the working poor in the South account for about 20% of local employment, compared with about 9% in the Central-Northern Italy.

The economic dichotomy between the North and South was obviously added the demographic one. The downward population trend has been exacerbated in the past two years by the effects of the pandemic. The inevitable increase in deaths has been compounded by declining migration flows and a further decline in births in the last two years. At the end of 2021, 58,983,000 people resided in Italy, which was 253,000 fewer than at the beginning of the year (−4.3%). In the two-year pandemic period, the South lost 362,000 inhabitants. Despite a higher excess mortality due to the spread of the pandemic, the Centre-North contained the loss to 297,000 by virtue of the increase in immigrant residents from abroad (Figure 3) and the rest of the country (Table 4). The downward population trend over the past decades is expected to continue over the next half century, concentrated in the youngest age groups. The phenomenon will assume its greatest intensity in the South, where fewer and fewer children will be born, partly due to reduced fertility, and outflows of migration will continue. In the South, the components of demographic dynamics are affected by the continued reduction in the number of births and migration losses to the Centre-North. The depopulation of the South, more intense than that of the Centre-North, will affect all age groups up to age 74. Between the end of 2021 and the beginning of 2070, the South is expected to lose 41% of its youngest population (0–14 years of age), amounting to 1,061,000, compared to −18% in the Centre-North (−880,000); the reduction appears even more intense for the population of working age (15–64 years), which will shrink by almost half (−44.8%). The population in the 65–74 age group will also shrink: −21.3% in the South and −2.5% in the North. As compared to the rest of the country, a more intense population reduction in these age groups in the South is matched by stronger growth in the older age groups [11].

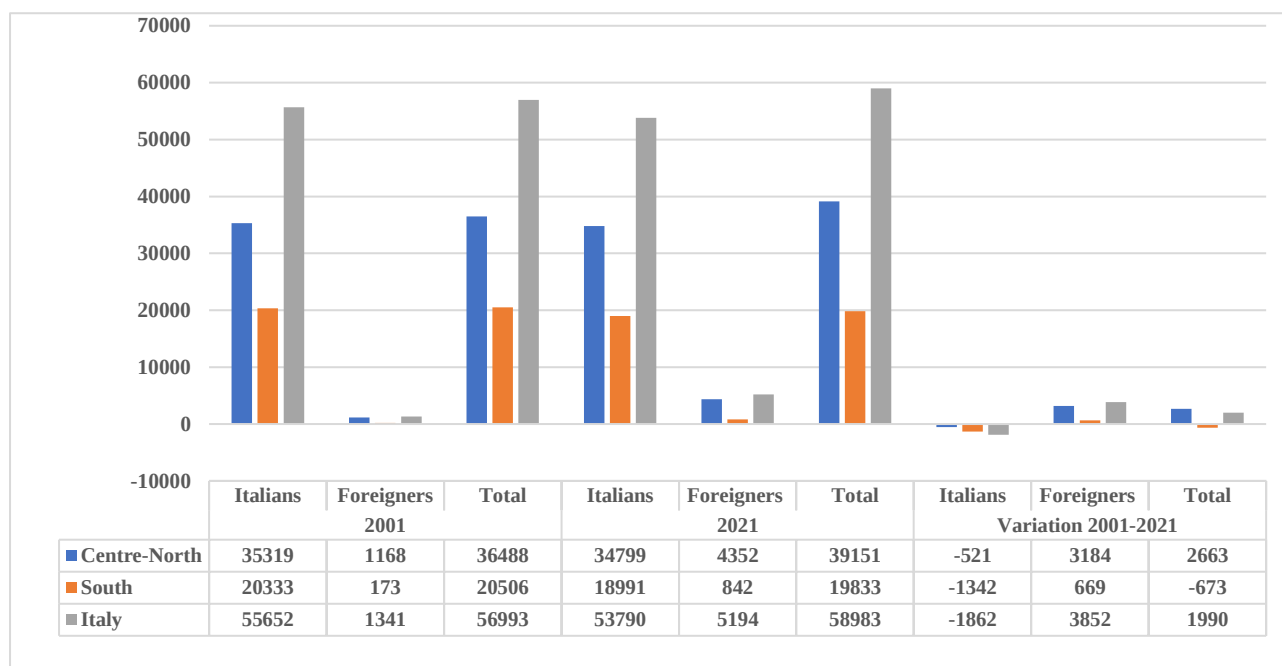


Figure 3. Resident population in the South and Centre-North by citizenship (thousands) [11].

Table 3. Migration flows and balances of Italians residing in the South towards the Centre-North and abroad from 2002 to 2020 [11].

Category	Between 2002 and 2020		2020	
	Units	%	Units	%
Emigrates	2.440.900		129.608	
of whom graduates	502.196	21	39.394	30
of whom young people (age 15–34)	1.258.024	52	66.903	52
of whom graduates	323.719	26	26.438	40
Immigrates	1.373.907		71.218	
of whom graduates	181.312	13	14.448	20
of whom young people (age 15–34)	487.794	36	21.940	31
of whom graduates	79.541	16	6.259	29
Migration balance	–1.066.993		–58.390	
of whom graduates	–320.884	30	–24.946	43
of whom young people (age 15–34)	–770.230	72	–44.963	77
of whom graduates	–244.178	32	–20.179	45

Emigrations and declining fertility in the South have disrupted the physiological age structure of the population. The largest decline is in the under-35 age group and shows how pressing the issue of sustainability, linked to the joint effects of demographic dynamics, and established structural aspects of the economy, should be a priority of the NRRP.

Table 4. South's migration flows and balances towards the Centre-North by regional origin. Years 2019 and 2020 (absolute values in thousands and balances per thousand residents) [11].

Region	Cancelled				Registered				Balance		Balance x 1000 residents 2020
	2019		2020		2019		2020		2019	2020	
	Total	Of whom foreigners	Total	Of whom foreigners	Total	Of whom foreigners	Total	Of whom foreigners	Total	Total	
Abruzzo	8	1,7	6,6	1,4	5,6	1,1	5,5	1	-2,4	-1,1	-0,8
Molise	2,2	0,4	1,9	0,4	1	0,3	1	0,2	-1,1	-0,9	-2,9
Campania	38,5	6	31,5	5	17,3	2,4	15,1	1,5	-21,2	-16,4	-2,9
Puglia	23,7	3	19,1	2,7	11,5	1,7	11,3	1,4	-12,2	-7,8	-2
Basilicata	4,1	0,6	3,4	0,5	1,4	0,3	1,3	0,2	-2,7	-2,1	-3,9
Calabria	17,6	3	14	2,5	6,8	1,2	6,4	0,7	-10,8	-7,6	-4
Sicilia	33,1	3,7	25,8	3,1	14	1,4	13,5	1	-19,1	-12,3	-2,5
Sardegna	7,1	1	5,9	0,8	5,4	0,5	5,2	0,4	-1,7	-0,7	-0,4
South	134,2	19,3	108,2	16,4	63	8,8	59,3	6,4	-71,1	-48,9	-2,4

3.2. Resources for economic growth

In 2021, there was +6.6% growth in national GDP due to a recovery in investment, which grew by 17% (+22.3% in construction), and from foreign demand (+16.7% export). This growth was faster in the North (+7.5% in the Northeast; +7% in the Northwest). On the other hand, the South participated in the restart: after falling by 8% in 2020 (-9% the national figure), the southern GDP grew by 5.9% in 2021 [17].

The positive effect of reopening and policies to support household incomes and businesses, which supported consumption and preserved business continuity, are the main factors in the post-pandemic recovery. The manufacturing sector in the southern regions, which had shown 7% growth between 2015–2016, was not as ready to face the increase in global demand, registering a significantly lower pace of export growth than the rest of the country.

Linked to the Russian-Ukrainian war, the year 2022 opens with global dynamics that have exposed the Italian economy to the risk of disrupting the rather sustained and cohesive post-pandemic recovery path between North and South. Rising gas and electricity prices, to which the national energy budget is linked, are eating into household and businesses budgets, especially in Southern Italy, which is characterized by a greater presence of small businesses with structurally higher energy supply costs than the country's average. Therefore, the competitiveness and the very resilience of these enterprises are mainly linked to the ability to access low-cost energy sources. In this context, when not tight, the risks of a greater loss of competitiveness of the production system in the South today are linked, on the one hand to its structural composition, and on the other to the possibility of access to low-cost energy sources.

However, as linked to an inflation rate of 7% in 2022, the general increase in prices weighs more in the South, where there is a greater presence of less affluent households (more than one-third, compared to 14.4% in the Centre and less than 13% in the North), and are thus less able to sustain the 10.1% increase in prices for goods and +3.0% for services.

In the primary sector in the South in 2021, investments were particularly significant (+22.1%, compared with +15.7% in the Centre-North from the previous year, with 477,000 employed in the South and about 449,000 in the Centre-North).

The Italian industrial production index (with base 2015 = 100%) grew by 12.2% in 2021 (from 93.3% to 104.7%), returning to a value just below that of 2019 (105.3%). The favourable national dynamic was supported more by industry in the Centre-North regions: in the South, there was a 2% decline in 2021 compared to the pre-pandemic period (+8.0%), with a drop in added value of -27.3%, certainly related to the increase in prices of petroleum products, which weighs significantly on the area's total foreign sales [11]. Southern businesses continue to have difficulty in accessing public funding aimed at supporting youth entrepreneurship, which dropped by more than 10% between 2000 and 2016. Additionally, business financing geared toward expanding production capacity was less significant in the South. Machinery, equipment and means of transport grew by 8%, well below the figures for the regions of the Centre (+13.9%), the Northeast (+14.5%) and the Northwest (+12.4%). Alternatively, investments in construction grew in the South, mainly thanks to the public stimulus (Ecobonus 110% allowing tax deduction for "green" renovation works) [18] and interventions financed by the NRRP.

Southern exports also grew by 7.2% in 2021, much less than the regions of the Centre (+14.4%) and, especially, the Northeast (+18%) and Northwest (+18.9%) [18].

The investment policy in the tertiary sector was more balanced: in 2021, +17.9% in Italy overall (+18% in the South, +17.9% in the Centre-North). The recovery in the two areas presented +4.5% in the South, which is equal to the Centre-North, and particularly strong for "hotels and restaurants, transport and communications" (+13.8% in the South and +10.8% in the Centre-North), followed by "wholesale and retail trade, and repair of motor vehicles and motorcycles" (+7.4% in the South, +8.1% in the Centre-North). There was a slight recovery of employment in the sector in the South (+0.8% over the previous year), especially in the Public Administration branch [18].

3.3. *Information and communication technology*

A particularly vulnerable sector in the South is businesses with more advanced digital skills related to the evaluation, analysis, and use of digital content. They account for only 46.6% in industry and 42.5% in services, with the percentages in both cases being lower than those in the Centre (47.2% for industry and 43.8% for services) and the North (47.9% for industry and 45.1% for services).

Southern enterprises also show a decreased inclination toward advanced automation and robotics. In 2018, the share of Northern firms that had invested in advanced robotics was 8.1%, about twice as high as in the South (4.8%). The percentage increase for planned investments between 2019–2021 were 15.7%, in the North and 12% in the South [19].

To reduce the overall exposure of the Southern labour market to the risk of technological change, it is necessary to increase investment in this area, support the retraining of less skilled workers and the upgrade the skills of those employed in more specialized fields such as data scientists and data engineers. In fact, digital skills promote the processes of growth and innovation of economic systems, supporting a positive employment dynamic [19]. The risk decreases as the ability of an area to attract high-skilled workforce increases, which, in turn, is related to the diffusion in firms of productive

functions (in the typical case of advanced industry), and/or extra-productive functions (human resources, logistics, post-retail, transportation, etc.) with a high concentration of skills [20].

The improvement of digital skills in the South would also contribute to the revitalization of the cultural and creative industry, for which the NRRP provides the allocation of 155 M euros. Even in this sector, Southern regions show a delay compared to other areas of the country. There is a certain weakness of synergies between cultural and tourism professionals, which is an important issue in an area like the South, where tourism and cultural resources represent an enormous potential for growth and development that would certainly be encouraged by the establishment of joint and structural actions between the cultural and tourism sectors. On the other hand, it should not be overlooked that the growth prospects of the South depend on the overall improvement of the local production system and the implementation of reforms and investments aimed at improving the business environment. The contribution of the financial system and its ability to respond to business needs is also crucial.

3.4. Credit to industry and entrepreneurship

Business credit in the South now provides worse conditions than in the Centre-North. Interest rates are about 70 basis points higher than the average rate of about 8% over the 2010–2019 period. Additionally, the cost of credit and the use of internal guarantees show territorial gaps and reflect the more unfavourable environment, and thus risk, in which southern firms operate. In the post-pandemic recovery phase, business credit was supported by the strengthening of public guaranteed schemes and the moratorium on small and medium enterprise debt introduced by the government. Discontinuation of these support measures would lead to serious difficulties, especially for southern firms that operate in riskier sectors, on average (such as trade and low-tech services) and are smaller and younger than those in the Centre-North. Their more fragile balance sheets, with lower operating margins and lower capitalization, would expose them to the problem of lack of funds in a financial market characterized by an increasing cost of credit and a reduced availability, especially in the weak areas of the country [21].

Additionally, not to be overlooked, is the aspect of connectivity interventions in rural and inland areas to increase the attractiveness of territories at a greater risk of depopulation, improve job opportunities and make the Small and Medium Enterprises (SME) in the South more competitive and productive. The REACT-EU fund allocates additional resources for cohesion policy to the tune of 13.5 billion of which nearly 8,5 billion are targeted to the South. The NRRP combines digitalization, innovation and competitiveness with culture and tourism. It is necessary to fund technological upgrading of production processes and infrastructure to reduce structural competitiveness gaps and improve interoperability among public entities. To revitalize the economic sectors of culture and tourism, the digitalization of cultural heritage and the creation of dedicated platforms must be increased to enable citizens and practitioners to explore new ways of enjoying cultural heritage and stimulate the economy based on the circulation of knowledge [22].

3.5. Mobility and logistics

Public transportation, which has always been in crisis in the South, deeply deviates from national standards of sustainability. Weak demand reflects poor service quality, which was further worsened

during the health emergency period. The North-South gap is particularly evident in urban and short-range mobility infrastructure (subways, streetcars, bike paths, pedestrian areas), rail and highway sections, less so for the national and regional rank road network. However, the performance and locational factors of the networks strongly penalize the South, especially in terms of accessibility to destination basins for people mobility (and market basins for goods mobility).

In relation to land area, the Southern Road endowment is significantly higher than that of the Centre and the North, precisely in the segment of roads of national interest (14.1 km per 100 sq. km, compared with 4.3 in the North), but it is lower in the highway network (1.7 km per 100 sq. km, compared with 3 in the North). As for rail infrastructure, lines operated by the national operator in the South account for 34% of the national total. The differentials are even more evident in the performance requirements: the share of lines classified as “core” and “node” (the latter present only in Campania) is only 25% of the entire network, while in the Centre-North it is more than double (51.7%). In addition, the percentage of the electrified network is 58.2%, compared to the 80% recorded in the average of the Central-Northern regions, and that of the double-track network is 31.7%, 22 points lower than in the Centre-North. It is also worth reiterating the South’s very serious backwardness in the high-speed rail, with an endowment of only 29 km (Naples-Salerno), less than 3% nationwide [11].

Simply measuring the stock of endowments does not provide information on the actual functionality of the infrastructure apparatus for economic development. Instead, it is necessary to assess quality and performance factors such as the type and frequency of public transport services that rely on the networks (rail transport), or saturation levels such as road congestion, or low train frequency. A key aspect is levels of infrastructure accessibility with respect to potential markets for businesses or catchment areas for people. Following this new approach, recent studies by the Bank of Italy confirm that the South’s lag in transport infrastructure (networks and nodes) is strong in terms of accessibility when compared to physical endowment [11]. As for metros, 221 km of them are in operation in Italy today, located in only seven cities (Milan, Turin, Brescia, Genoa, Rome, Naples, and Catania). Of these, Naples and Catania have just under 30 km of metros together, accounting for just 12% of the national total.

The picture of bikeway density appears particularly critical for southern cities. The less than 500 km of bike lanes surveyed in 2020 account for just 9.4% of the national total; that’s 5.8 km of network per 100 sq. km (5.4 km in 2019), compared to 61.1 km in northern capitals. However, between 2015 and 2020, urban bike lanes developed in the South at a good rate (+38.4%), much higher than the national average (Figure 4). However, this is not enough to appreciably close the very wide gap year after year. If we add to this lag the state of extreme degradation of the road surface in southern cities, often still paved with solutions suitable at best for horseback riding, it is understandable why the penetration rates of “light” means as an alternative to the car (bicycle, micro-mobility, sharing mobility) are so low and very far from the performance of the Centre-North [11].

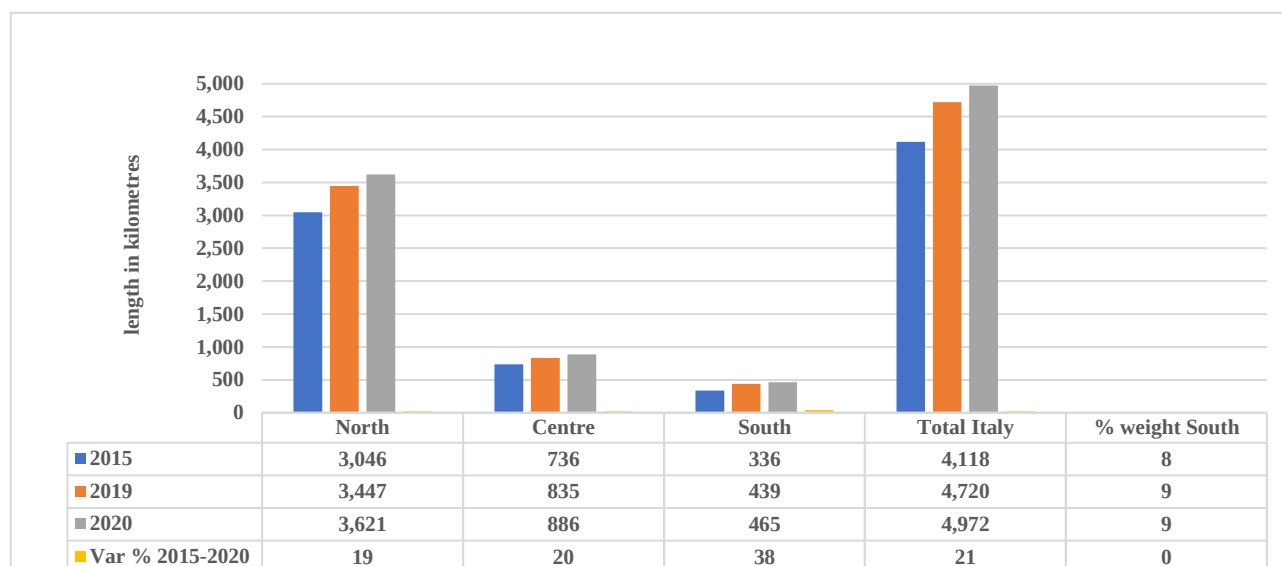


Figure 4. Length, variation, and density of bicycle lanes in provincial capitals/metropolitan cities—(a) Values referred to all capital municipalities [11].

The share of capital cities with the presence of sharing mobility services is 22.5% in the South (2020) for car sharing and bike sharing and 15% for electric scooters. Scooter sharing services are not present in any city, which affects 9.1% of the capitals in the Centre and 6.4% of those in the South instead. The penetration rate of services is particularly low for bike sharing (present in 45.5% of the capitals in the Centre and 72.3% of those in the North, percentages which are well above those in the South), while the gap is much smaller for electric scooters [11].

The great growth of scooters can be read well in the numbers related to sharing vehicle fleets. In the South, the availability of electric scooters for rent amounted to nearly 3,500 vehicles in 2020, accounting for more than 70% of the entire sharing fleet, which precisely almost tripled between 2019 and 2020 on the back of the spread of scooters. However, the South's share of sharing vehicles in the national total remains quite marginal, at 5.8% of the total, despite the increase in weight recorded in the comparison with 2019 (3.5%) (Figure 5) [11].

In general, what emerges in the South is a lack of capacity and determination on the part of local governments to accompany citizens' mobility patterns toward more advanced balances in terms of increasing safety and conditions of usability and comfort of services as well as reducing traffic and pollution.

As is well known, the NRRP has assumed the centrality of the ecological transition and, within it, the development of renewable energies. In this context, wind and photovoltaics are the sources that will make a decisive contribution to the achievement of the green objectives assumed by the Italian government in the next decade. The Mission 2 Component 2 of the NRRP (M2C2—Green Transition and Sustainable Mobility) envisages about 25.2 billion euros of interventions, of which 39.6% are in local sustainable transport, 27.4% in renewables, 16.3% in electricity grid and infrastructure upgrades, 12.7% in the hydrogen supply chain, and 4.0% in the transition [23–25].

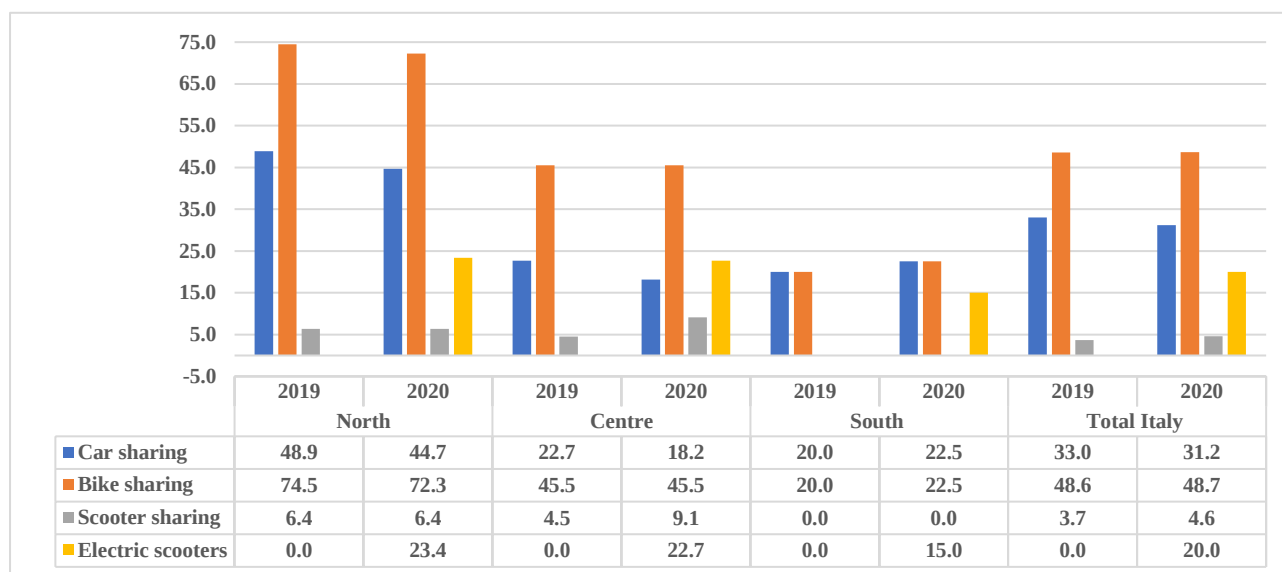


Figure 5. Presence of “sharing mobility” services in Italy by type of service (percentage of municipalities with presence of services)—(a) Values referred to all capital municipalities [11].

On the other hand, as some studies on a local and national scale have underlined [26–28], the pandemic crises have profoundly changed travel habits in many countries. The increase in private car use to the detriment of public transport is a phenomenon that needs to be analysed carefully for future transport planning that does not neglect aspects related to the needs and perceptions of inhabitants regarding the use of sustainable forms of mobility.

4. Results

The objectives of economic, social, and territorial cohesion with green and digital transition form the core of the NGEU program.

Social and territorial cohesion is one of the basic topics of the programming of the entire NGEU and aims to reduce the citizenship gap by overcoming the serious inequalities that exist between different areas of the Italian territory, with the goal of supporting a new phase of realignment, addressing a historical obstacle to the country’s development. In fact, after a virtuous period from the post-World War II to the mid-1970s, Italy has seen the gap between the socioeconomic conditions of the South and the Centre-North increase almost continuously for half a century [29].

The current post-pandemic crisis, exacerbated by the embargo measures taken by NATO countries against Russia following the invasion of Ukraine, has inflicted a further shock on the south of our country, affecting key sectors of the economy in these areas, such as tourism and the service sector, and severely affecting youth employment, particularly women, of an industrial and entrepreneurial reality consisting mainly of small and medium enterprises, which are less protected during economic and financial crises, as well as a decreased ability to react cohesively and synergistically to the adjustment requirements imposed by globalization. Therefore, it is necessary to overcome the structural weakness of the southern production system, in line with the specific recommendations of

the EC, which had already clearly outlined a way forward: investing in innovation to reduce regional disparities in all sectors; investing in human capital to counteract the slow pace with which Italy is transitioning to a knowledge-based economy; promoting digital skills in the transformation processes underway to have an impact on productivity; and investing in the administrative capacity of the public sector especially at the local level. Another key aspect is the digitalization of public services that would help save money and time and improve the quality of services for citizens and businesses. In this area, Italy continues to register indices among the lowest in Europe: the e-government indicator scores 47.7 points compared to 53.9 of the world average.

The European Union's NGEU program, through its two main instruments, the RRF and the Recovery Assistance Package for the Cohesion and Territories of Europe (REACT-EU), aims to provide a response to the pandemic crisis of unprecedented scale and ambition, with investments and reforms that aim to accelerate the ecological and digital transition, improve the training of workers (men and women), and achieve greater gender, territorial and generational equity.

For Italy, the NGEU represents an unmissable opportunity to get its hands radically and concretely on the reforms needed to modernize its Public Administration (P.A.), strengthen its productive system, and intensify its efforts in combating poverty, social exclusion, and inequality. Thus, the NGEU can be an opportunity to resume a sustainable and lasting economic growth path by removing the obstacles that have stalled Italian growth in recent decades. The RRF alone guarantees resources of €191.5 billion (€68.9 billion non-repayable grants), to be deployed over the period between 2021–2026. Italy also intends to fully utilize its financing capacity through RRF loans, which is estimated at 122.6 billion for the country.

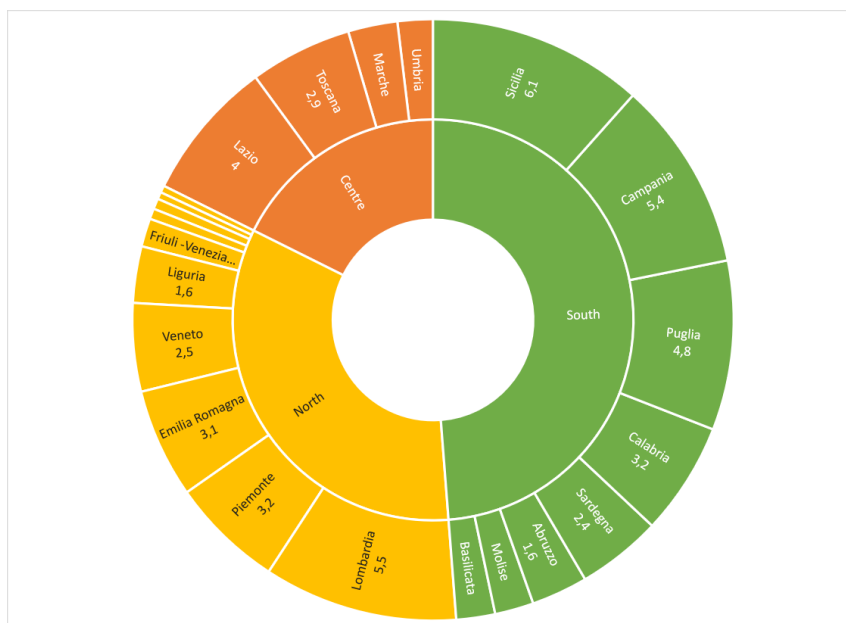


Figure 6. Distribution of NRRP funds in Italian regions (Amounts in billion Euro).

The commitment of the NRRP is to invest at least 40% of the financial resources in the eight southern regions (Figure 6). A large part of the resources is earmarked for the Ministry of Infrastructure (Table 5), due to the need to make a series of investments aimed at developing a modern, digital,

sustainable, and interconnected transport infrastructure network, capable of increasing transport electrification and digitalisation, as well as improving the country's overall competitiveness, particularly in the south of Italy.

Table 5. Resources allocated to central government (Amounts in millions of euros).

Government body responsible for the specific contribution	allocated resources
Ministry of Infrastructure and Sustainable Mobility	15,7
Ministry of the Interior	12,1
Ministry of Education	8,9
Ministry of Health	6,6
Ministry for Technological Innovation and Digital Transition	4,9
Ministry for Ecological Transition	2,9
Ministry of Labour and Social Policy	2,3
Civil Protection Department	1,2
Ministry of Culture	1,2
Minister for the South and Territorial Cohesion	0,4
Minister for Public Administration	0,3
Grand Total	56,6

However, the official NRRP documents approved in Brussels do not seem to contain comprehensive information on the territorial allocation of resources. Moreover, the logic of the “share” does not appear functional, since it is based on the principle that one should only justify expenditure items and not take due account of the results achieved. In this view, one looks at the amount of expenditure to be certified as an “end”, not as a “means” to produce effective spill overs in the territories that most need to raise the level of development [30–32].

The NRRP includes an ambitious reform project. The government intends to implement four major contextual reforms: P.A., justice, simplification of legislation, and promotion of competition. P.A. reform improves administrative capacity at the central and local levels, strengthens processes for selecting, training, and promoting civil servants, and incentivizes the simplification and digitalization of administrative procedures. It is based on a strong expansion of digital services, in the areas of identity, authentication, healthcare and justice. The goal is marked de-bureaucratization to reduce costs and time currently burdening businesses and citizens.

First and foremost, reducing the territorial gap between the Centre-North and the South requires a timely reconnaissance of investment needs on which to base the territorial allocation of resources so that the competitive mechanism underlying the NRRP resource allocation process does not become a tool of distortion in the proper allocation of resources where they are most needed and not where they are only best able to coexist, by circumventing them, with the inefficiencies of Italian bureaucracy. This seems most relevant for investments in neuralgic areas where citizenship rights are formed (health, social services, local public transport), for which the governance of the NRRP planned to entrust the system of calls for proposals with the mechanism of resource allocation to local governments, forcing them to compete for resources. It would have been more consistent with the purposes of the NRRP to have a mechanism for resource allocation based on a real reconnaissance of investment needs, especially in areas where certain essential levels of performance have been defined, such as the social sphere.

To better understand how important it is to reform the central and peripheral bureaucratic apparatus, as well as the level of competitive, administrative, and planning capacity of our industrial reality, it is enough to consider that the resources allocated through “call for proposals” procedures that had not made it to the selection of projects to be financed amounted to 23.4 billion as of January 31, 2022. On the same date, no arrangements had been made to safeguard the Southern share on the resources that had not been allocated due to a lack of assimilated applications from territorial entities in 15 of the 28 competitive procedures activated up to that time, with a total value of more than 3 billion euros. Thus, a gap had been created between allocative efficiency of available resources to beneficiaries, territorial entities and better-equipped companies, and equalization equity that prioritizes territories with greater public and private investment needs.

The largest component of the resources to be allocated to territories in the South is also the one most exposed to the outcomes of inter-territorial competition, and thus, to the risk of non-absorption by the South itself. In particular, the resources planned to be allocated to the southern regions, amounting to more than 14 billion, are allocated through over-the-counter measures or competitive procedures that supplement the constraint of territorial allocation of resources to the South without providing safeguard clauses or provisions for reallocation on a national basis in the event of non-absorption of the Southern reserve. Ultimately, the South is at risk of poorly absorbing the potential of the NRRP due to the difficulties that entities will face in promptly and effectively allocating resources within the required timeframe, by the last six-month reporting period, August 31, 2026.

This is due to the low competence of the staff of the southern territorial entities compared to the rest of the country. In fact, the efficiency of the allocative mechanism depends on the administrative planning skills of the entities in translating investment choices into technical projects and managing the bureaucratic procedures for preparing tenders, awarding works, and closing construction sites in a timely manner. On this aspect, local governments in the south have greater shortcomings, with real risks about the compliance with the implementation timeframe of projects, especially those implemented in the social sphere.

Strengthening the attractiveness of local governments would require support from the centre while innovative forms of implementation project alliances could be thought of at the local level. The support of the central governing bodies in the phase of absorption of available resources, opening and closing of worksites, should come from national centres of competence that assume full responsibility of public operators actively committed to territorial equalization [11]. More generally, it is necessary to activate all the accompanying tools for design and execution with which the governance of the NRRP has been equipped, including the power of substitution by the state in cases of blatant design and/or implementation inadequacy of the decentralized entities. Thus, persisting difficulties and blockages in the Italian P.A., particularly in its territorial articulations, represents one of the main causes of the loss of competitiveness of the Italian system. Therefore, an important step to be taken is represented by incisive interventions to bridge the deficit of internal skills in public administrations and the persistent lack of qualitative and quantitative staff turnover. Weaknesses in the P.A. condition, both the opportunity to stimulate investment and competitiveness and the ability to provide primary services for the community, limit the possibilities for further development. The P.A.’s actions should ensure that public investment is a stimulus to the construction of new standards of access, enjoyment of goods services and quality [33].

The EC stressed the need to define an overall strategy and vision for the path of reform and organizational innovation: to focus on effective and rapid implementation and implementation mechanisms; to structurally build administrative capacity through pathways for selecting the best skills and qualifying people; and to eliminate procedural bottlenecks that could slow down the implementation of the investments envisaged by the NRRP.

As a prerequisite for any possibility of achieving the NRRP's goal of reducing the relative and absolute backwardness of our South and of the whole country, the reform of the P.A. will have to be flanked by the specific interventions for territorial cohesion contained in Mission 5 ("Inclusion and Cohesion"), under Component 3 ("Special Interventions for Territorial Cohesion"), which covers two areas of intervention, for a total of resources of about 2 billion euros:

1. The NRRP for the resilience of inland, peripheral, and mountainous areas, through the strengthening of internal areas.
2. Projects for the development of the South, including investments to combat poverty in education, the strengthening of assets confiscated from organized crime, and infrastructure investments in the strengthening of special economic zones [34–36].

5. Conclusions

Among its objectives, the Italian NRRP has the improvement of the levels of efficiency and resilience of the Italian economic and production system. A prerequisite for achieving this result is to reduce the existing territorial gaps between the various Italian regions.

From the estimate of the delays in the aspects that identify an adequate level of quality in the socio-economic context, represented by the 16 components of the 6 missions of the NRRP (health and health care, digitalisation, culture and education, environment and territory, public administration, transport and logistics, residential adequacy, etc.), the needs for intervention and the consequent distribution of the programme's funds were established, with about 45% allocated to the South, 33% to the North, 17% to the Centre, and 5% to fill the weaknesses common to the entire Italian system.

The South is thus the "seriously ill person," and as such, the one most in need of treatment.

Having recognised such significant funds to be allocated to cure the pathologies that more than a century of mismanagement, not to say neglect, have caused to our southern Italy, does not in the least mean that we have automatically solved its problems and compensated for its backwardness.

The unrepeatable opportunity represented by the NRRP to be effectively exploited will, in fact, require that one of the most significant weaknesses of our South, the inadequacy of public administrations and regional policy, be solved first and foremost, because the effective use of funds for the purpose for which they are intended depends on its correct and efficient functioning.

If this is not done quickly and effectively, a large mass of the funds earmarked for Italy will be lost to the further advantage of the other Italian regions of the more virtuous and diligent European countries, which, on the other hand, will certainly not fail to use every euro at their disposal to further improve themselves. Therefore, the gap that is intended to be bridged would worsen, both for the South with respect to the rest of the country and for Italy with respect to the rest of Europe, and the unused NRRP, from being a possible cure for our ills, would turn into a further cause of their worsening [37].

Use of AI tools declaration

The authors declare they have not used Artificial Intelligence (AI) tools in the creation of this article.

Conflict of interest

The author declares no conflict of interest.

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