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Equity in the delivery and financing of health care and the SARS-COV-2 pandemic in Italy: where next?

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SUMMARY
Introduction: the Italian National Health Service (*SSN-ServizioSanitario Nazionale*) is characterised by growing socioeconomic inequalities in health care use and financing. Over the years, these have increasingly translated into tangible violations of the equity principle, which characterises the SSN, based on the idea that the public health system, according to the Constitutional dictation (art.3) should guarantee equal access to care for citizens based on healthcare needs regardless of their ability to pay.
Objectives: to discuss the main Italian evidence available concerning income-related equity in the use (horizontal) and the financing (vertical) of healthcare services from a health economics perspective; to describe the main challenges posed by the SARS-COV-2 pandemic.
Methods: the main evidence for Italy from the economic literature on the measurement of both horizontal and vertical equity is discussed and recent trends in healthcare expenditure are reported before and during the SARS-COV-2 pandemic.
Results: before the outbreak of the pandemic in Italy, there were equity problems both in the use of services (horizontal) and in financing (vertical). Pre-existing socio-economic inequalities between individuals are increasing as a consequence of the economic crisis triggered by the pandemic. On the one hand, public health expenditure increased to counteract the consequences of the pandemic and, after years of cost containment policies, there has been a general awareness by the public decision-maker of the importance of public investment in health. The financing, on the other hand, does not seem to have altered its composition and at the moment no specific additional sources have been introduced.
Conclusions: the economic crisis triggered by the pandemic is likely to increase socio-economic inequalities and to negatively affect the equity of the public healthcare system. Despite remarkable increases in public health expenditure introduced during the pandemic, the interregional structural gaps remain, which are sources of inequality and inequity. There is the need to define the criteria for the allocation of the increased public funding, which should be based on equity and not only on efficiency and appropriateness.

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Authors' contributions
The drafting of the work is the result of the joint contributions of the co-authors. In particular, GC edited the part on vertical equity (par. 4), DD edited the bibliographical review, the introduction (par. 1) and the review on the empirical part on vertical equity, and MG the part on horizontal equity and health expenditure (paragraphs 2 and 3). The conclusions are common.

1. Introduction

We performed a narrative review on the evidence on equity in the Italian National Health Service (ServizioSanitario Nazionale -SSN; National Health Service -NHS), to analyse the main challenges posed by the SARS-COV-2 pandemic from both an economic and health perspective.

In this review, we will analyse equity both in the use of services and in health financing. These are essential dimensions of the performance of the SSN, whose high equity levels led in 2000 to the Italian health system being evaluated by the WHO as the second most performing healthcare system in the world after France[1].

Economic theory assesses the fairness of a health system using two fundamental concepts. The first is horizontal equity, which implies that individual citizens who have the same health needs should receive the same amount and quality of care regardless of their socio-economic status and their ability to pay for such services (1).

The second is vertical equity, requiring different treatment for individuals with different characteristics, which is typically used to assess the funding of health services, whereas in practice the concept implies that individuals with different incomes should be called upon to contribute differently to SSN funding [2].We want to analyse the state of the art before the pandemic, in order to understand whether over the last twenty years the fairness of the NHS has stood up to the challenges posed by the continuous cost containment policies, that were introduced due to the growing public budgetary constraints imposed at the macroeconomic level (most recently by the global recession of 2008) and by the growing regional decentralisation resulting from the implementation of fiscal federalism after the reform of Title V of the Constitution in 2001. Moreover, we will try to understand how the pandemic and its management could impact on the fairness of the system. The first wave of SARS-COV-2 pandemic has had a devastating "horizontal" effect in Italy both on the health of the population and the economy. It has taken some citizens, mostly the elderly and those in the northern regions, and left others; it has had a profoundly dissimilar economic impact

[1] The issue of socio-economic inequalities and equity in the state of the health of the population will not be dealt with in this contribution as its examination would require a specific contribution, which can be produced later as the pandemic is still occurring and the evidence and data available at the moment are limited.

between economic sectors (it has flooded tourism and cars and favoured insurance, for example), between companies of different sizes (the most affected seem to have been micro and small enterprises), and between territories (north vs. south). The pandemic also had a "vertical" impact on individuals, companies, regions, and inequalities in incomes and wealth worsened. It has put health systems around the world in difficulty, including Italy. Here, in particular compared to other countries, there have been strong variations between regional health systems in the management of the pandemic; one example is the case of Lombardy and Veneto which, despite having identified the virus at the same time, have different systems and have used distinct ways to manage their health services, with consequent varying evolutions of the contagion (3). Since March 2020, Italian policies implemented to counter the negative impact of the pandemic on health and the economy have followed each other at an increasing rate, also predicting significant increases in public spending on health (4). It therefore seems useful to mention the evolution of public health expenditure before and during the pandemic and trying to evaluate how the increases in public spending recorded as a result of the interventions are compared to the pre-pandemic situation. The question that arises is if the increases in the NHS budget, could also help to protect the fairness of the system from further deterioration.
In the light of these considerations, the work is structured as follows. The first part of the work reports evidence on horizontal equity and analyses the trend of public health expenditure both before and during the pandemic. The next part contains evidence on vertical equity and considerations on the possible evolution in the times of the pandemic and later. The last part concludes.

2. Horizontal equity and SARS-CoV-2 pandemic

Over the last three decades, the NHS has been characterised by growing and persistent socio-economic inequalities in health and access to health care. However, differences exist in the socio-economic determinants of inequalities in access to and use of health services. Both the epidemiological and economic literatures primarily indicate differences such as the income and level of education of an individual (5). These inequalities have increasingly translated over the last twenty years into real violations of the principle of horizontal equity that has characterised the NHS since its foundation, namely the concept that the public health system, according to the Constitutional dictate (art.3) must guarantee access to care for citizens based on their need for care regardless of their ability to contribute to the cost for such care.
The Italian case has the peculiarity that the region of residence is a source of inequality both in health (6) and in the use of healthcare services.
Horizontal equity in the use of health services is measured in economic theory with

indicators comparing the concentration of incomes in the population concerned with the distribution of utilization across income groups (1-2).
The indicators estimated for Italy indicate problems for specialist and diagnostic visits, but a substantial equity in the use of hospitalisation and basic medicine services (7-9). When dealing with territorial inequalities in access to services, reference can be made to the Eurostat indicator measuring the average levels of unmet needs for medical care. Although in Italy only 2% of the population has unmet needs, mainly due to costs and waiting times, the value reaches 5% for the lowest income class(quintile), while it falls to 1% for individuals belonging to the highest quintile; moreover, values in the poorest southern regions are almost twice as high as in the richer regions of the North (10). The economic literature has traditionally pointed out that horizontal equity is difficult to define and measure. The main limitations of the poor attempts to measure it systematically in health systems are based both on theoretical considerations (what to measure, what equity, with what methods/indicators) and on the empirical difficulty of measuring reliable indicators that need to be based on income data, individuals' socio-economic conditions, data on utilization (1-2).
Another problem is access to health care in fragile population groups, such as immigrants, which once again shows variability between regions (13) and appeared to be critical across Europe during the pandemic (14). The elderly are severely affected by the pandemic in general, particularly if they have chronic health conditions [4]. Treatment for chronic diseases was delayed during lockdown with the consequent difficulties of access due to extended waiting lists [3]. According to a survey by The Bridge Foundation, 55% of chronically ill people had difficulty accessing visits as a result of the pandemic and 65% said they had longer waiting times. It therefore seems to be crucial to monitor the situation of all fragile population groups during the pandemic as this could exacerbate existing disparities[2].

3. Public health expenditure before and during the pandemic

A main feature of the Italian health system over time has been its ability to improve the health of the population at a relatively low cost (10).
In 2019, health spending per capita in Italy was about 14% lower than the OECD average ($3,649 versus $4,224) (Figure 1). Over the same period, the share of GDP of total health expenditure (excluding investment expenditure in the health sector) was 8.8%. When this share eventually reached the OECD average, however, it remained below the levels of European countries such as France (11.2%), Germany (11.7%), and Portugal (9.6%), although it was close to Spain (9%) and higher than

[2] See https://www.ilsole24ore.com/art/effetto-coronavirus-55percento-malati-cronici-ha-difficolta-ad-accedere-visite-ADvTcvT, last accessed 17/7/2020.

Greece (7.8%) (Figure 1). The value has remained consistently below the OECD average, mainly due to slow GDP growth since the start of the global recession in 2008 (15); 74% of health expenditure is financed from public funds; the rest consists mainly of private household expenditure (called Out-of-Pocket - OOP) (23%). Several cost-containment measures were introduced after the last global recession in 2008 to reduce public spending, with the result that the burden shifted from the public sector to households, setting tighter budgetary constraints on public spending; for example, by increasing the ticket on medicines and specialist and diagnostic services (16-20). In addition, there has been the partial use of standard cost financing and the imposition on deficit regions of heavy re-entry measures (19)[3].

In Italy, private OOP expenditure is significantly higher than in other Northern European countries such as France (9%), Germany (13%), and the United Kingdom (16%), although it remains below some other southern European countries such as Greece (35%) and Portugal (28%) (Figure 1).

[3] On the evolution of health expenditure over the last twenty years and the ensuing debate, see Gerotto, 2020 [17].

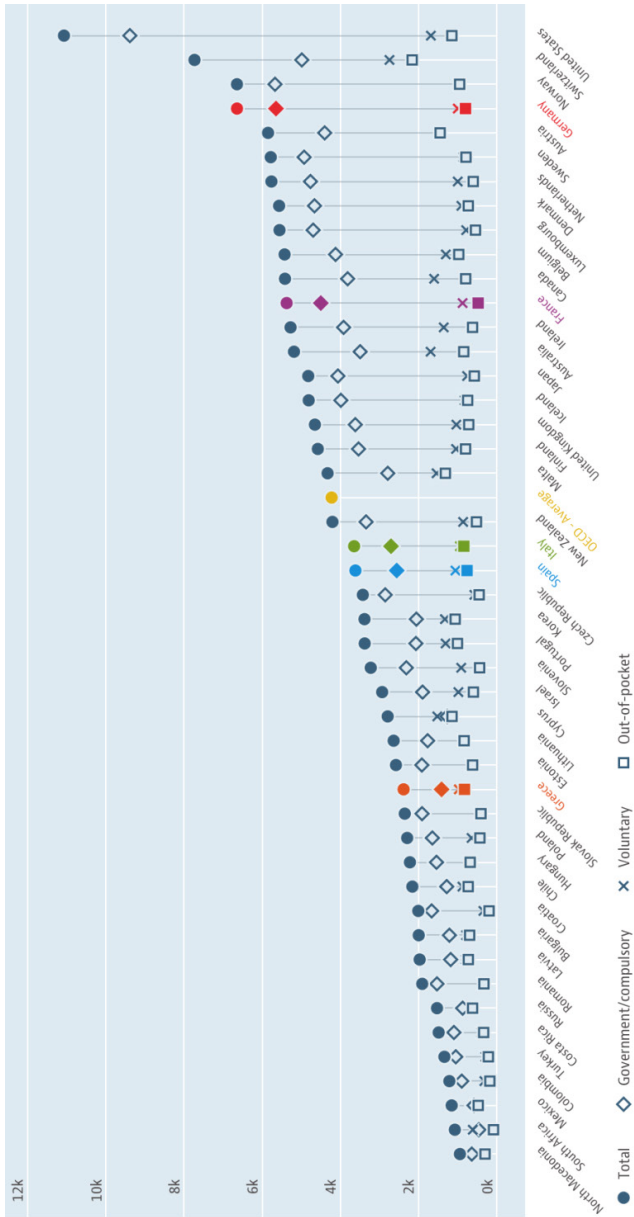
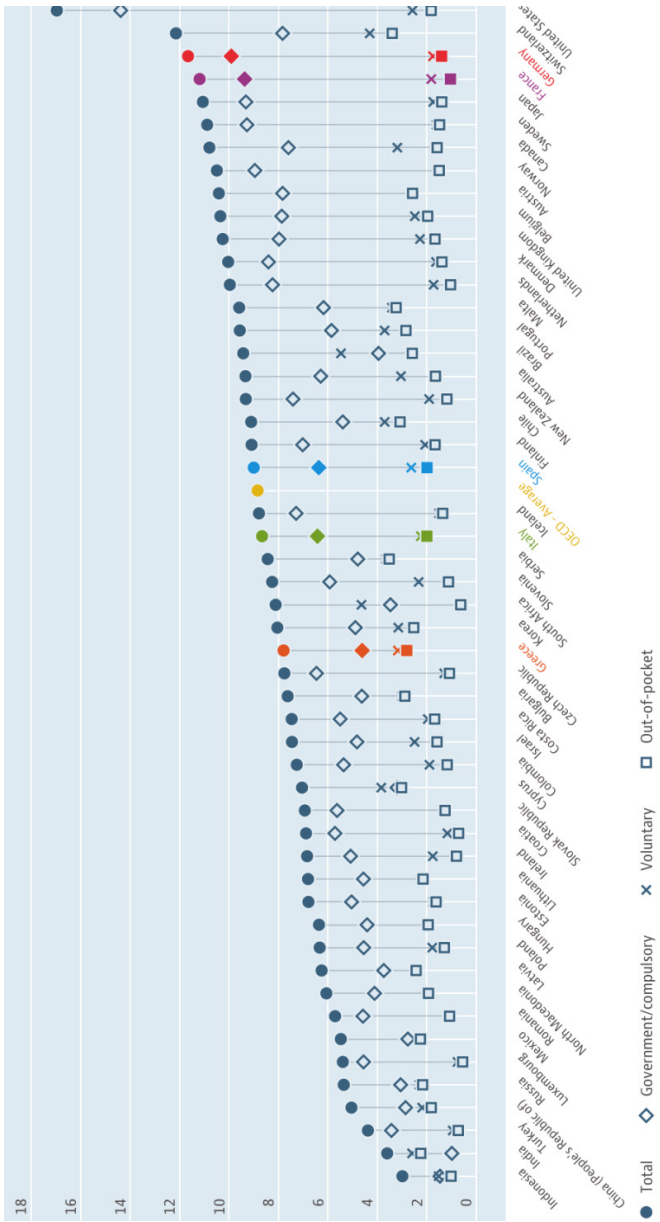


Figure 1 - Health expenditure in OECD countries and its components (public, private, and voluntary insurance OOP) 2019 or last available year
(a) Per-capita healthcare expenditure (US dollars)
Source: Corte dei Conti (30).



(b) Healthcare expenditure - % on GDP (Gross Domestic Product)
(*) 2019 data or the latest available year
Source: OECD (2020), Health spending (indicator). doi: 10.1787/8643de7e-en (Accessed on 19 July 2020)

After the outbreak of the health and economic crisis, the government approved a further set of measures aimed at distributing resources to many sectors, including health care. The economic measures aimed to support both workers and businesses, as well as aggregate demand (3-4). The main measures concerned public transfers, labour, loans, tax concessions, and tax credits aimed at increasing the liquidity of enterprises (21). In 2018, forty years after its foundation, the NHS was substantially under-funded, with staff shortages and structural north-south supply gaps (17, 19). Shortly before the outbreak of the pandemic, the government had begun to increase NHS funding with the 2019 budget law[4]. The state's contribution for health spending was increased by 7 billion euros for 2020 to 84.6 billion[5], with further increases expected for the following years (0.60 for 2021 and 1.609 for 2022) (22)[6]. Moreover, business competitiveness and development spending forecasts in 2020 rose from € 22.6 billion to €127.8 billion[7].

Since the 1990s, and up to the pandemic, public health spending has always been conditioned in this country by the need of complying to the macroeconomic constraints imposed by the European stability mechanisms on public accounts. Nevertheless, the pandemic has reversed the situation: new resources to give oxygen to public healthcare. However, many questions remain unanswered. Tax breaks, such as those provided for IRAP - Regional Tax on Productive Activities - are likely to have a negative impact on equity in financing. This because IRAP is one of the main sources of funding for regional health care and it is progressive. It is also expected that health care financing will be reorganised (22). Moreover, one of the main persistent problems of the health system is that public health expenditure shows significant variations between regions, reflecting the historical socio-economic disadvantage of the southern regions. Since the 1990s, the policies of the Italian Government for the rationalisation and containment of the growth of health expenditure combined with decentralisation in the administration and provision of health care have led to growing interregional inequalities and to the creation of twenty-one regional health systems (23-24). There is debate surrounding the role of tax decentralisation reforms that have devolved financial responsibilities to the regions. Whilst evidence reveals a reduction in expenditure on certain services provided to citizens and that disparities in the health of the population have not increased (25), the pandemic has highlighted

[4] The budget for 2019 was €114.474 million, with an expected increase of € 2,000 million for 2020 and a further increase of €1,500 million for 2021. See Ragioneria Generale dello Stato[20], UPB (2020) [22]. Law no. 145/2018.

[5] On the details of the measures and appropriations provided for, see UPB (2020) [22].

[6] Ragioneria Generale dello Stato data (https://openbdap.mef.gov.it/it/BdS/Scopri, data published 8 July 2020)

[7] Ibidem

the different ways of managing the health services in the various Italian regions. This triggered a debate on the effectiveness of regional decentralisation in pandemic management (3).One of the advantages of federalism lies in the empowerment of local authorities, which could imply in principle a greater attention to the needs of citizens. At the beginning of the pandemic, the lack of a national plan of immediate effectiveness coupled with a relatively high regional autonomy likely allowed some regions to adapt their response more quickly and probably often more effectively.
However, there is a lack of up-to-date evidence, to inform this debate and to ascertain how the different regional pandemic management policies have led to regional inequalities and inequities and, by this means, to a deterioration in the NHS equity. Moreover, resources must be prioritised even when, as in the case of the extraordinary interventions planned for the pandemic, healthcare expenditure increase in order to set need criteria that do not perpetuate or, even worse, increase existing iniquities. The Parliamentary Budget Office considers it essential for the public sector to be able to allocate additional funding by setting priorities in terms of cost-effectiveness and appropriateness in order to cope with increasing pressure from service providers, in particular from the private sector [22]. This will hold even more if the resources allocated at the European level will be used in order to increase health expenditure. The Board of Governors of the ESME (European Stability Mechanism)and finance ministers from the 19 Euro-area countries agreed on 15 May 2020 to make pandemic crisis support available to Member States. Although an examination of the issue goes beyond the scope of the work, a country with support for pandemic crises may require a drawing of a precautionary credit line. The requirement for obtaining access to the planned credit line for EU Member States requesting assistance is to use it to support the internal financing of direct and indirect health care, as well as the costs related to treatment and prevention due to the pandemic. Although the stated objective is to minimise the costs of supporting pandemic crises by financing at lower costs than than the usual precautionary credit lines of the EU, there is a debate on whether or not to apply for EU funding, since the latter represents an additional source of indebtedness [26].

4.Vertical equity and SARS-CoV-2 pandemic

Vertical equity concerns the different treatment between individuals; in the health care field, it has been mainly applied to financing. It suggests that the rich should contribute more to the financing than the poor.
The leading concept is that of "progressivity", which is usually measured in graphical terms (Gini curves and the concentration of payments for health services), although when curves cross it may be difficult to ascertain their meanings. It can also be measured synthetically

with indexes; the most frequently used for progressivity is the Kakwani index, assuming values ranging from -2 to +1, with negative values representing regressivity and positive values progressivity (27).

To study the progressivity in the financing of health care, we need to take into account all financing sources used to fund health care services. Some of them are compulsory, such as general taxation and payroll taxes; others are voluntary, such as insurance premiums and OOP expenditures.

The method used to measure "vertical equity" in the financing of health care, that is to identify if the financing is "fair" because the burden falling on the richest is greater than that falling on the poorest, is based on the estimate of the "progressivity of the whole financing system". We measure the progressivity of each source of financing and calculate an aggregate index weighting each source with its share in the whole financing of health care in Italy. In practice, we calculate Kakwani indexes for each source and we weigh them with the aggregate financing mix of Italian health care. Such a methodology is accurate and difficult to apply, though it is open to criticism. The first critique points to measurement problems. When administrative data are not available, we need sample surveys to determine who pays and how much. In a paper submitted for publication (28), we tried to overcome these difficulties by "merging" two different surveys: the household expenditure survey, allowing the measurement of "private" health expenditure and the amount of VAT paid out for health expenditures, and the SILC survey for income and fiscal payments to measure the financing of a portion of public health expenditure. At the end of our measurement exercise, we unfortunately concluded that in Italy the financing of health care expenditures in the 2010s was globally "regressive"; that is, damaging the poorer. This was not true before the reform introducing regionalisation/federalism (29).

The second criticism is the low information content of the final aggregate index stemming from the analysis, representing either progressivity or regressivity. There is the risk that aggregation entails "compensating effects", namely that specific regressivity components are cancelled out by contrasting progressivity effects, preventing researchers from disentangling where and why we should intervene. We have discovered the progressivity/regressivity of each source of financing, we can thus conclude that if certain sources are too regressive, we must act. Nevertheless, an important issue is hindered and coming to the fore due to the shifting of our health care system towards federalism aiming at less solidarity; put simple, this is because of regional differences. If, then, in a specific region we discover regressivity problems – having understood if the regressivity is due to the financing mix or to specific sources of financing –we should intervene in that region and not at the country level. The question is if the redistribution of resources among regions, today still in place, helps in reducing regressivity. In our study, we believe that the Italian redistribution system, far from being ideal because it neglects many "need" factors in allocating resources to regions,

nonetheless lowers the regressivity of health care financing.
The third problem surrounds the "meaning" of progressivity and regressivity if applied to specific sources of financing such as OOP expenditures. For compulsory sources of financing, in fact, the financing of health services is never directly linked to benefits obtained by using services; we must pay independently from usage. In such an eventuality, the meaning of progressivity is sound because it is not linked to use. For OOP expenditures, instead, we pay for what we use; greater payments for the richest (progressivity) also imply greater use by the richest. Does progressivity now represent "equity" in the financing? The international literature, having noticed the issue, has largely preferred to overlook this, because of hard to solve measurement problems. Which sound equity concepts could we apply to OOP expenditures? We could measure either the "price subsidy" or the "income support" to guarantee to the poor; the first requires that, given equal needs, the poor pay the same private health care service less than the rich. The second should measure, given the same price of private health care services for everybody and that the poor face higher health risks than the rich, the income support necessary for the poor to face such higher needs. As mentioned previously, both concepts are thus very difficult to measure.
Having discussed the three major criticisms to the empirical studies aiming at progressivity measurement, we can summarise the main results of our study [28]. In Italy, there are five major sources of health financing: VAT, IRAP, and Regional IRPEF surcharge are the public sources, while private insurances and OOP expenditures are the private ones. Table 1 shows the composition of the financing mix in 2015:

	Regional tax on production activities (IRAP)	Income tax (IRPEF) Regional surcharge	Value-Added-Tax (VAT)	Out-of-pocket (OOP)	Private insurance
ITALY	14.80%	6.30%	52.30%	24.00%	2.60%

Source: Corte dei Conti (30).
Table 1- Financing mix (main sources of financing) in 2015

A recent study using 2015 data showed that, because the bulk of health care financing comes from VAT, its regressivity also forces the aggregate index towards regressivity, leading to an Italian equity index equal to -0.099, representing low regressivity[28]. Moreover, we estimated that the public component of financing has a slightly smaller regressivity index of -0.090 [28]. Regressivity levels, though, are very different among Italian regions; the poorest southern regions, assuming that they should face all financing burdens for their inhabitants (ex-ante), would overburden their poor citizens

more than the richest northern regions [28]. Such a result is mainly due to the higher regressivity of VAT in the southern regions. In our work we also show that, due to the redistribution of VAT resources for public health care financing from north to south, the lower regressivity of northern VAT reduces the ex-post regressivity of financing in the south: the redistribution leads to an overall regressivity equal to -0.024 [28].
This result highlights the value of solidarity among regions, often not sufficiently emphasised because of complaints about the higher levels of inefficiency in public healthcare delivery of southern regions (which are undeniable); the poor therefore suffer less than without redistribution. Loosening solidarity implies damages to the poorest population groups. This is not only or not mostly a geographical problem, but a "vertical equity" issue.
Bearing this in mind, we try to scrutinise both the main policy options in the discussion and the plausible consequences, which remain unmeasurable due to the pandemic still ongoing.
The increased risk of horizontal inequities in the utilisation of health services, together with the worsening health care in the south of Italy due to the regionalisation of Italian public health care, has been pointed out elsewhere [31]. The total amount of financing for the Italian NHS and the essential levels of care Italians are entitled to, would be decided by politicians no longer considering the "Italian" median voter, but sticking to the preferences of median voters of northern regions; because voters of the north redistribute resources to the south, they are also given the task of deciding the public/private mix in health services financing. This shift has consequences for different age and income groups, too.
What we are interested in now, is not the global amount of financing but its composition by sources and the ways they are collected. We faced a shift from general taxation financing, based mainly on progressive income taxes such as IRPEF, to a financing mainly based on more regressive indirect taxation such as VAT. Moreover, the remaining progressive sources of Italian financing (Regional IRPEF surcharge, IRAP) – due to both economic crises since 2008 and to the unwillingness, by industrial associations, to maintain the IRAP source deemed to be illegitimate and burdensome – have reduced their revenues and may, eventually, be abolished.
The Italian shift from direct to indirect taxation is in line with trends in many other countries, and is also coherent with the increasing concentration of income and wealth in recent years as shown by Piketty [32].
The existing North-South divide ("Questione meridionale"), i.e. the socio-economic disadvantage of southern regions, can be worsened from the shift to a financing rooted on VAT. In the poorest regions, the ratio of consumption to own income is greater than in the richest regions, due to public transfers and subsidies. On the one hand,

VAT tax rates are different for different goods, and lower for necessities, which are more represented in the consumption basket of the poorer south, being "progressive" with respect to "consumption". However, on the other hand, VAT tax rates are more regressive with respect to earned incomes in southern regions because of such a high consumption/income ratio. Consequently, it becomes crucial to reduce regressivity in financing and to keep the redistribution mechanism among regions; while lowering the redistribution among regions would be detrimental to southern regions.

Linked to these considerations is the current discussion about the importance and social utility of the third financing pillar, made up of Supplementary Funds (Fondi Sanitari Integrativi).

The existing evidence shows that the recourse to supplementary funds is not homogeneous in Italy, because the members are concentrated mainly in the north (where the firms/economic categories that promote them are based), in the active age groups (i.e. not among the elderly), and among those with lower health "needs"[33]. A progressive "emptying" of the NHS, to delegate previously public tasks to supplementary Funds, could deteriorate equity, while increasing the North-South divide. It would be interesting to analyse whether the "progressivity" of the financing system is at risks of worsening. Unfortunately, due to a lack of data, we are unable to answer this question because the existing sample surveys do not allow us to distinguish between supplementary funds and the traditional private insurance. However, we know from previous studies that the tax benefits – i.e. the reduction in taxes due to the deductibility of premiums/contributions paid to supplementary funds - are largely concentrated in favour of the richest; this may signal a serious indication of the regressivity of the supplementary funds financing "system" [34].

The pandemic is part of this scenario. On the one hand, it has brought the NHS, doctors, nurses, and all other professional categories to the centre of attention, as these individuals have worked much more (and with greater risks) than contractually envisaged, highlighting a spontaneous attachment to the system that goes far beyond the typical behaviours of contracts of a private nature. This holds even more if one considers that the negative incentive typical of the private sector, i.e. the dismissal, is missing here. On the other hand, the supplementary funds sector, in most regions, seems to have mostly played a residual role compared to the public sector in covering Covid-19 patients.

A first consideration is related to the sources of health financing. In the period following the pandemic, it will be necessary to reconcile, on the one hand, the economic interests of entrepreneurs, who are calling for the abolition of IRAP, as well as considerations of vertical equity in the financing of health care, for which IRAP should remain among the sources used.

A second consideration is related to the resources available to the NHS. How should they be used in order to achieve better health? Fiscal federalism by its nature can improve efficiency but can also challenge equity. Italy has moved over the years 2001-2008 to a much less stringent budget constraint than in the past, making possible to better satisfy the needs of all regions, including those in the south. The latter, while losing resources in relative terms, received more funding in absolute terms. The 2008 recession made it possible to highlight what happens when budgetary constraints become stringent, beginning to reveal equity problems associated with the federalist approach.
Indeed, given the problems that emerged due to increasing divergence among regional healthcare systems and policies, often determined by the evolution of the regional healthcare "model" adopted, political forces debate the hypothesis of a greater centralisation of decision-making through a further Constitutional Reform. Establishing greater centralization indecision-making, where the main problem is not the treatment of chronic conditions but that of pandemics, can make coordination easier. The decision-making centrality does not necessarily require greater centrality in financing. Moreover, the return of a greater role for public financing, using direct rather than indirect taxes, does not appear on the political agenda at the moment this article is written.

5. Conclusions

It seems crucial to monitor the situation of all fragile groups during the pandemic as this could further aggravate existing disparities. One of the main consequences of the lockdown was to decrease the provision of medical services not addressing the treatment of Covid-19, resulting in worsening treatment for chronic diseases or any other non-Covid-19 condition. Furthermore, further disparities may have arisen between those who could afford private assistance (including publicly located private provision – called “intra-moenia”) and those who relied solely on public assistance. Such conditions, have a non-homogeneous concentration horizontally and vertically. How Italy will emerge from the health and economic crisis is also relevant, i.e., either with own resources or with the financial support of the European Union, the latter implying higher levels of public indebtedness. Whenever there is public debt, the refund mechanism no longer passes through the specific tax sources designated in the federalist system, but it follows the entire structure of public tax collection, where the weight of direct taxes is higher. Paradoxically, debt financing should lead to greater progressiveness and to higher levels of vertical equity. A positive consequence of the pandemic is the softening of the macroeconomic budget constraint imposed on public health care for a decade in our country by the European mechanisms of stability of public financing with a reversed situation: new and unconditional resources for the

health budget available, with a renewed emphasys given to the fundamental right to health both at the national and the European level. Better late than never, one might say. However, it will be crucial to define the allocation criteria for the new resources that will be made available for the NHS. This should be achieved by taking into account both efficiency and appropriateness and, above all, equity criteria. Monitoring health equity is even more necessary than in the past. The ghost of health systems in which too many citizens still have no form of coverage and lack access to essential health services is still appearing in the industrialised world, posing a further threat to the health of the population in times of pandemics. Attempts to measure horizontal and vertical equity based on income have so far been sporadic and unsystematic in Italy. However, with the increasing availability of administrative data in real time and thanks to the development of information technologies, with the new techniques of big data analysis (e.g. through machine learning), real-time monitoring of equity is no longer a fantasy, but a concretely achievable goal. In times of pandemics, health equity monitoring is no longer an option, particularly if one considers that in history the growth of socio-economic and health inequalities has often been followed by a crisis in democratic institutions.

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