



**DISSECTING INEQUALITY:
CONCEPTUAL PROBLEMS, TRENDS AND DRIVERS**

Alberto Tidu

WORKING PAPERS

2023 / 13

**CENTRO RICERCHE ECONOMICHE NORD SUD
(CRENoS)
UNIVERSITÀ DI CAGLIARI
UNIVERSITÀ DI SASSARI**

CRENOS was set up in 1993 with the purpose of organising the joint research effort of economists from the two Sardinian universities (Cagliari and Sassari) investigating dualism at the international and regional level. CRENoS' primary aim is to improve knowledge on the economic gap between areas and to provide useful information for policy intervention. Particular attention is paid to the role of institutions, technological progress and diffusion of innovation in the process of convergence or divergence between economic areas. To carry out its research, CRENoS collaborates with research centres and universities at both national and international level. The centre is also active in the field of scientific dissemination, organizing conferences and workshops along with other activities such as seminars and summer schools.

CRENoS creates and manages several databases of various socio-economic variables on Italy and Sardinia. At the local level, CRENoS promotes and participates to projects impacting on the most relevant issues in the Sardinian economy, such as tourism, environment, transports and macroeconomic forecasts.

**www.crenos.unica.it
crenos@unica.it**

CRENoS – CAGLIARI
VIA SAN GIORGIO 12, I-09124 CAGLIARI, ITALIA
TEL. +39-070-6756397; FAX +39-070- 6756402

CRENoS - SASSARI
VIA MURONI 25, I-07100 SASSARI, ITALIA
TEL. +39-079-213511

Title: DISSECTING INEQUALITY: CONCEPTUAL PROBLEMS, TRENDS AND DRIVERS

Prima Edizione: Dicembre 2023
ISBN: 978 88 68514 891

Arkadia Editore © 2023
Viale Bonaria 98 - 09125 Cagliari
Tel. 070/6848663 - info@arkadiaeditore.it
www.arkadiaeditore.it

Dissecting inequality: conceptual problems, trends and drivers

Alberto Tidu

University of Cagliari & CRENoS

Abstract:

Every social scientist knows that understanding inequality is pivotal for understanding the dynamics that rule human society. Inequality is at least as old as society, and some authors even argue that economics itself originate from the inequalities in skills and needs that inevitably lead to specialization, trade and surpluses. Despite its relevance, it is nevertheless very hard to define inequality and – somehow paradoxically - it might get even harder when one tries to restrict the focus to subcomponents such as *income* or *wealth inequality*. And even when the *income* or the *wealth* part of the equation is agreed upon, inequality still remains conceptually problematic: what shall be perceived as *equal*? Do a few really well-off (or extremely poor) outliers make a distribution more inequal than a larger number of people quite above (and quite below) the mean? Conceptual problems aside, a large amount of literature focuses on inequality trends and drivers and falsifies commonly-held beliefs such as the widespread myth that inequality is trending upwards. Some potential drivers are highly controversial: notably globalization is seen by some authors as stimulating a race to the bottom that ends up exacerbating existing inequality, whereas others argue that it is beneficial for the more disadvantaged.

The goal of this review is to show how the conceptual vagueness behind the word *inequality* calls for as much rigor as possible in the study of its possible forms and notions and in the identification of the best tools for its measurement. However, one should not be fooled by associating such a vagueness with a lack of relevance of the concept and of its implications: *au contraire*, we should feel compelled to investigate the multitude of possible facets that the concept might assume and the fittest options and instruments that statistics and mathematics provide for their measurement: desirable policies could be radically different from each other depending on the theory that one espouses, and they range from the pursuit of resource redistribution to a mere acceptance of inequality as either inevitable or desirable. Also, different metrics could suggest different approaches, so one should carefully select the measures that will help him understand and describe the type of inequality that he is investigating.

Keywords: inequality, income, wealth, poverty

JEL Classification: D31, D63, E21, I32

Acknowledgment

The author gratefully acknowledges funding from the EU Horizon Program, project number Project 101061104 ESSPIN “ECONOMIC, SOCIAL AND SPATIAL INEQUALITIES IN EUROPE IN THE ERA OF GLOBAL MEGA-TRENDS”. The opinions expressed in this document are the sole responsibility of the author and do not necessarily represent the official position of the EU.

1 Introduction

Inequality is one of the most debated issues of our time, although it is hardly a fresh topic for discussion: back in 1753, a competition in Dijon for the best essay responding to the question “What is the origin of inequality among men, and is it authorized by natural law?” was won by Jean-Jacques Rousseau, who hypothesized an original state of moral equality among men up to the invention of agriculture and the creation of laws and property (Rousseau, 1754). Far more recently and with a drastically different tone¹, Welch (1999, p. 2), in his – interestingly well-titled – *In defense of inequality*, argues that <<*all of economics results from inequality. Without inequality of priorities and capabilities, there would be no trade, no specialization and no surpluses produced by cooperation. Incidentally, there would be no economics*>>. Testart (1982, p. 528) goes so far as to suggest that the first type of economic activity - <<*food production above basic needs*>> – originated out of <<*the will to increase inequality*>>.

Despite the enduring debate and although unanimously acknowledged as a central topic not only in economics but in every field of social sciences, everything about inequality is arguably controversial and disputable, including its very definition².

Indeed, what is inequality? What shall be measured when trying to assess how much inequality one is looking at? These questions do not get any easier if the focus is restricted, as often the case, to either *income inequality* or *wealth inequality*: in a certain sense, the issue might get even trickier, because now one also needs to define what is to be considered “*income*” or “*wealth*” and what are the specific features that make two individuals’ income or wealth levels similar to or different from each other. Let us consider income, for instance, and let us define it as the increase in a person’s command over resources during a given time period (Anand & Sen, 2000; Atkinson & Bourguignon, 2001; Dworkin, 1981): we are being oblivious to everything that happened before (not to mention what will happen later) in the life of said person. A very low income would signal a minimum increase in the command of resources by that person but would not reveal anything about his actual standing, which depends on many other parameters, first and foremost his initial position (that is, wealth). Moreover, we defined income as the increase in a person’s command over resources, but we should probably talk about “command over *some* resources”: for instance, one’s income could very well represent his increase in command over healthcare-related resources in an out-of-pocket health system, but much less so in a single-payer system where healthcare is largely covered by the government³. And even within the same country, an area might suggest – or even require - attending expensive private schools in order to pursue a decent education that somewhere else is attainable at a public institution and comes free of charge; some places will allow for moving around through public transit (for largely different fares, even in the same country) whereas others will require owning

¹ Not that the two positions are irreconcilable: indeed, both seem to acknowledge that society as we know it (and as we have known it for millennia) is founded on inequality. What Rousseau and Welch might diverge on is the ethical value of that bond.

² Cowell (2011, p. 1) acknowledges that <<*“Inequality” is in itself an awkward word, as well as one used in connection with a number of awkward social and economic problems. The difficulty is that the word can trigger quite a number of different ideas in the mind of a reader or listener, depending on his training and prejudice*>>.

³ Indians use their after-tax income to cover almost $\frac{3}{4}$ of their health expenses, whereas Luxembourgiens and Norwegians only need 14% of their income, since the rest is covered by public funding, either through government transfers or social insurance contributions (OECD, 2021).

a car; some places will require private security for the population to feel safe, whereas other areas will do just fine through ordinary publicly-funded policing. To complicate the issue further, “social wage” elements - such as the benefits received from communally enjoyed items like municipal parks or public libraries - are available in some places, whereas somewhere else individuals will have to look for alternative (and possibly costly) solutions to fulfill the same needs. Also, whereas information about income is certainly more available than other information, such an availability drastically differs from one country to another, both for the time being and for historical records. These drawbacks are highly relevant, since <<*economic trends are not acts of God, and [...] country-specific institutions and historical circumstances can lead to very different inequality outcomes*>> (Piketty & Saez, 2014, p. 838) and inequality needs to be analyzed and compared over time and across countries.

These are only some of the issues that one faces when dealing with the concept of inequality and show how such a theme is incredibly more complex than we may think when only skimming through its surface. Indeed, every defining aspect of inequality should not be taken for granted and should instead be thoroughly analyzed and put under scrutiny. Our review tries to do this: we do not expect to settle any debate, but rather we aim to signal some themes that should actually be debated whereas they are oftentimes blindly accepted. As a matter of fact, we might argue that these debates do not need to be settled at all because different positions represent different meanings assigned to the word inequality: all such meanings may be equally valid and useful but their foundations should be understood and specified. Accordingly, our contribution aims to show the positions of different authors in some of the most characterizing issues and metrics of inequality and how such positions might lead to quite different meanings for the same word. Specifically, in the next section we will discuss whether inequality should really be our focus, or alternatively it is poverty that we should instead be concerned with; in the third section, we will review the different ways that have been proposed to measure inequality, both as concerns what to measure and how to measure it; in the fourth section we will explore historical and current trends in inequality within and between countries and analyze some of the proposed and most discussed drivers of inequality; finally, in the fifth and final section, we will draw our conclusions and we will summarize the implications of inequality.

2 Inequality or poverty?

The first issue that shall be explored is whether inequality is really the root of all evil as it is oftentimes depicted, or instead what we should actually be concerned with is poverty. Indeed, is there anything about inequality itself that is problematic regardless of the actual standard of living of those at the bottom of the economic distribution? In a hypothetical society in which poverty had been erased, would it still be important to keep inequality under control? If we accept Simmel’s (1907) view of money as a claim on society, then - by construction - modest “shares” are modest because some other shares are more conspicuous: this would be consistent with Thompson & Leight’s (2011) findings for the United States, indicating that increases in the top share of income lead to declines in the incomes of low- and middle-income households. Although in most developed countries, such levels of poverty do not necessarily imply a state of physical deprivation that might put one’s life in jeopardy, they

are still consistent with Sen's (1999) definition of poverty as having insufficient resources to be able to function at a socially acceptable level.

Scrolling through the relevant literature, it is easy to observe that most scholars believe that economic inequality is a problem itself, either because it mechanically produces and defines poverty or because of ethical reasons. On the other hand, some argue that increases in economic inequality are unimportant when one considers how virtually everyone – notwithstanding his position in the social ladder - is better off nowadays than they would have been in the past. Consequently, Conard (2016) defends high salaries as incentives for the most talented to cultivate their skills and to take risks that will reward not only themselves but society as a whole. Similarly, Mayor (2015, p. 115) states that <<*the creators of that wealth receive only a small fraction of the benefits they convey to the general public*>> and even that <<*a greater degree of wealth inequality in a liberal market economy free of coercion or fraud is in fact a sign that greater benefits are being produced for the general public by those creators*>>. Peterson (2017, p. 6) acknowledges that <<*many of the worries about inequality carry with them implicit criticisms of capitalist economic systems*>> and this might indeed be a reason why a sizeable number of arguments in defense of the harmlessness of inequality originate from conservative writers and think tanks, such as the Heritage Foundation or the Cato Institute. Indeed, critics of such counterarguments highlight how such distribution of wealth does not actually seem to occur - or at least it has not occurred during the last 40 years, since most of the economic growth has been flowing towards the highest income earners (Milanovic, 2016a). Indeed, one reason of concern about inequality – according to Atkinson (2015) – is the highly unequal distribution of outcomes among the winners, whose entity he identifies as a social construct⁴. Concerning the pursuit of economic growth, Stiglitz (2013) argues not only that the slices of the pie are usually appropriated disproportionately by those who are already better off, but also that the pie itself becomes smaller – not larger – because of inequality, since the wealthy are less likely to spend the additional income on consumption. Brückner & Lederman (2018) argue that greater inequality might indeed enhance economic growth in low-income countries, where the potential impact of investment growth (more likely to be originated when the additional income is attributed to those already better off and whose needs are already covered) is larger than consumption. All in all, causal relationships between growth and inequality are unclear and often hide behind many confounding factors (Peterson, 2017).

The other battleground is ethics, with some authors arguing that economic inequality is inherently unjust because it violates widely perceived moral norms of distributive justice. Others, on the other hand, argue that the focus should be on procedural justice based on just initial acquisition and just exchange, regardless of the inequality of outcomes that might subsequently originate (Nozick, 1974). Following this line of thought, some authors such as Watson (2015) argue that equal opportunities shall be pursued, since outcomes themselves are neither fair nor unfair. However, a catch-22 is often pointed to by those who note that countries with high economic inequality also have very low social mobility and thus unequal opportunities to start with: this might be true not only for countries such as Brazil and Guatemala (Peragine & Ferreira, 2015), but also for the United States, whose equality of

⁴ He argues that currently the top prize in the U.S. Open Tennis tournament in 2014 amounted to \$3 million, but the merit of the winner could as well have been acknowledged by means of a simple garland instead, and there would not be anything inconsistent or inherently wrong about that.

opportunity is declared by Stiglitz (2013) a <<*national myth*>>. Atkinson (2015) as well argues that inequality of outcome affects equality of opportunity for the following generation.

3 How to measure inequality (and also *what* to measure)

A fundamental issue when discussing inequality – even before assessing the most appropriate way to measure it – is *what* should be measured. Indeed, even when a certain parameter – such as income or wealth - is agreed upon, it is still not self-explanatory what constitutes the income or wealth that shall be measured and what is to be excluded from the definition. In order to understand what kind of problems one might encounter when measuring inequality in terms of income, one might think about rights that originate with a person's occupation, such as pension rights: two countries that had an identical distribution of *current* incomes (and, therefore, identical results for inequality if this were to be used as a proxy) might very well warrant radically different standards of living to their citizens when they retire. Another example of the inability of conventional definitions of current income to include factors that are necessary to approximate the commonly perceived notion of inequality is their incapacity to account for future earning potential guaranteed by education (a sort of unrecognized income-yielding asset, whose pursuit is registered as a period of reduced current income). Consequently, some authors argue for less conventional income measures, such as *lifetime income*: the limits, though, are obvious since either summation of income is performed after the death of an individual or it must be estimated rather than assessed. A similar notion is *permanent income* (Friedman, 1957): since income varies during the life of an individual, a younger person usually borrows money in order to maintain his desired level of consumption, knowing that he will be able to pay off his debts later when he earns a higher income; such higher income will also be used to save for retirement, in order to maintain a stable level of consumption even when the person will not be able or willing to work any longer. Again, there is no possible way to measure permanent income, which can therefore only be estimated and not precisely assessed. Because of the aforementioned income fluctuations, consumption expenditures are sometimes identified as a better proxy for life-time income than conventional income itself⁵. Consistently with these expectations, Hassett & Mathur (2012) find less inequality in the consumption of both durable and non-durable goods than conventional income would suggest, whereas Fisher, Johnson & Smeeding (2013) found that a divergence originated only during the Great Recession with the two indicators moving closely before such period. Finally, after adjusting for different spending habits at different levels of income, Aguiar & Bils (2015) found that inequality measured by consumption expenditures is very similar to income inequality.

⁵ Poterba (1989, p. 325) states that <<*If households base their spending plans on their expected lifetime income, then consumption provides a more accurate measure of lifetime resources than does annual income*>>; Cutler & Katz (1992, p. 546) argues that <<*Economic theory suggests that [...] consumption is a more accurate measure of the distribution of resources than is current income*>>. Also, Slesnick (1993, p. 1) believes that <<*it is more appropriate to evaluate poverty using a consumption-based measure*>>. Also on a macroeconomic level, consumption expenditure is a far more reliable indicator of a country's material wellbeing than GDP is – and it often constitutes a tiny fraction of the latter (e.g. Ireland's 30.4%, Qatar's 24.5%, Luxemburg's 29.5% compared to US's 67.9%), as highlighted by Deaton (2021).

What about wealth, then? Well, it seems to have its own issues too. For starters, similar assets with similar values could come with much different guarantees for the future: a similar house with a similar market value could cost only its initial price in the Gulf States (where there is no property tax), whereas it could come with a hefty yearly “fee” in Belgium⁶. But there are other ways in which taxes could influence the real value of a house⁷: a Cyprus homeowner will keep the entire rent he collects, whereas a Swiss one would have to pay more than half in rental income tax; some governments tax the purchase of a house, some tax the sale, some tax both, and some tax none; and, finally, could we really argue that the real value of a house that can be left to whomever we please after our trespass is the same of that house if the government had a say in that decision? As we hinted in some of the examples above, these differences do not only make wealth value hardly comparable across countries but also within them because tax rates tend to change quite often, and sometimes drastically so. But there are many other factors, beside taxation, that makes assets’ face values incomparable across space and time and any judgement about the equality of their distribution at least partially biased: from property rights’ guarantees down to more procedural issues, such as the very cost of maintenance of an asset. Moreover, income and wealth might be more intertwined than one thinks: unveiling the capital income’s ever increasing role in the income growth of the 12.000 American households that constitute the top 0.01%⁸, Guvenen & Kaplan (2017) attribute such a growth to the income shift from the corporate sectors to pass-through entities in the wake of the Tax Reform Act of 1986. The Tax Reform Act reduced personal income tax and created an incentive for such a shift, leading to huge gains for the richest households in the US and to an accumulation of wealth that had been unseen since the roaring 20’s and the following Great Depression (Saez, 2018). However, in layman’s terms, the money didn’t really change hands: the income that went to increase the personal wealth of the very well-off was still the same income that – up to that moment – increased the wealth of the companies they owned: given the extremely low propensity of the top 0.01% to consume further increases in income, did anything really change? Would the country really be more unequal?

The issues discussed above revolve around the “income” or “wealth” component of the syntagms “income inequality” and “wealth inequality” - but what about inequality itself then? Cowell (2011, p. 1) acknowledges that the word *<<can trigger quite a number of different ideas>>* and lists several separate standards of equality, ranging from complete horizontal equity to a minimum threshold, from equalization of future income prospects to the share of national

⁶ Even within the same country, differences might be huge: some Alaskan boroughs do not levy any property tax, whereas the median house in some counties around New York City costs over \$10.000 every year (United States Census Bureau, 2018).

⁷ We refer to houses as they are perhaps the more widely-known assets, but the same issues manifest with any other type of asset: think about dividend tax and capital gains tax, which reduce the value of your share in a company and which – even within the European Union – broadly range, respectively, from 0% in Estonia and Latvia to over 50% in Ireland and from 0% in Belgium, Slovenia and Luxembourg to over 40% in Denmark.

⁸ The impact is so large that it’s evident even when the entire top 1% is observed, despite the share of income of the in-group “lower 0.99%” having barely changed meanwhile.

⁹ This question is voluntarily left open, but we should acknowledge the very different implications of the answer: inequality has not increased at all in the United States if such entrepreneurial income is left out of the picture and one only focuses on wage- and salary-generated income.

income enjoyed by a certain disadvantaged group (or, conversely, the share enjoyed by a certain advantaged group), such as the lower (or upper) 10%. Moreover, not every income difference should probably be accounted for when measuring inequality: large families (when the unit of measure for inequality is the household and not the individual) or sick people usually need more resources than average in order to enjoy an average welfare; on the other hand – although this point is a subject of harsh debate in accordance to one’s own account and definition of justice – more resources could *justly* be assigned on the basis of merit, and this might not necessarily be perceived as an increase in inequality.

Let us now briefly explore some the most used measures of inequality.

- *Measures of range*, which measure the gap between a minimum and a maximum threshold, as in:

$$R = y_{max} - y_{min}$$

where y_{max} and y_{min} could represent respectively the richest and the poorest member of the sample, or alternatively the top and bottom 10% or any other share of the population. Clearly, even when – as in the latter case - thresholds identify groups and not individuals and therefore outliers do not skew the result, measures of range are still insensitive to everything that happens in-between (and that is, by construction, the majority of cases): if two societies had similar incomes at the top and the bottom of the distribution, such measures would provide the same result for both even if one had a homogeneous middle-class and the other one had none and its inhabitants were all either almost as rich as the top 10% or almost as poor as the bottom 10%.

- Variance, as in ordinary statistics, relies simply on averaging the square difference between each individual’s income and the population mean income, as per:

$$V = \frac{1}{n} \sum_{i=1}^n [y_i - \bar{y}]^2$$

However, since variance itself is not ideal for measuring and comparing inequality (if we were to double the initial incomes, the same distribution would result in a fourfold increase in variance), it is usually standardized (a coefficient of variation where the root of the variance is divided by the population average income) or logarithms are used, deriving either the logarithmic variance of incomes or, alternatively, the variance of the logarithms of incomes. These measures have their drawbacks too: transfers have the same impact on the coefficient of variation, regardless of the initial positions of the donor and the receiver (a transfer from somebody with €100 to somebody with €90 appears to reduce inequality just as much as a transfer from somebody with €100.000 to somebody with €99.990), whereas logarithmic measures have the opposite problem, with inequality paradoxically appearing as increasing when the receiver is a high-income individual, even when the donor is somebody with an even higher income.

- The Gini coefficient is derived from the Lorenz curve, which ranks the observations from the lowest to the highest and then plots the cumulative proportions of – respectively - the population (on the horizontal axis) and the

variable of interest (on the vertical axis). The Gini coefficient compares such cumulative frequency and size curve to the uniform distribution representing perfect equality: the greater the deviation of the Lorenz curve from the diagonal line that represents equality, the greater the inequality. The Gini coefficient is perhaps the most well-known and broadly used measure of inequality, at least as concerns economic literature, and it allows comparisons between populations of even largely different sizes (Hale, 2003).

- Theil's T is useful when access to individual level data is unavailable and aggregated data must be used: in such case, the Gini coefficient or the coefficient of variation could be estimated only if each individual were assumed to receive his category's average salary; however, such a computation would correctly estimate only the upper or lower boundary of real inequality, losing the variances within each category that contribute to total inequality (Hale, 2003). Theil's T is defined as

$$T = \frac{1}{n} \sum_{i=1}^n \frac{y_i}{\bar{y}} \log\left(\frac{y_i}{\bar{y}}\right)$$

It measures the difference between the theoretical maximum entropy (when every individual's income is equal) minus the observed entropy.

- The McLoone index reveals the variable's proportion that is concentrated in the lower half of a distribution compared to the median amount: the sum of all the observations at or below the median level is divided by the product of the number of observations at or below the median level times the median level itself. If the lower half of the distribution owns zero, that would also be the result of the McLoone index; on the other hand, if there are no observations below the median (everyone receives the same amount) the McLoone index is 1, describing the most equitable distribution that could exist.

When using statistical tools to assess inequality, we should always bear in mind that inequality is not itself a mathematical or statistical concept, but the term rather relates to several different concepts (dispersion, variance, skewness). We should therefore acknowledge that no single measure exists – and none could possibly be conceived – that fits every notion and subjective perception of inequality: as an example, Theil's T statistic recognizes as the most unequal distribution a situation where one individual is entitled to a society's entire income and everybody else is in the exact same position of having nothing; indeed, this might be perceived as an unbearably unequal scenario if everybody is starving, but when absolute poverty and physical deprivation are excluded from the picture – as it fortunately is ever more common in a large part of the world - one might argue that a situation where one is on the same level as almost everybody else feels more equal than one where half of the population is extremely poor in comparison to the other really well-off half.

4 Trends and drivers of inequality

A careful investigation of inequality becomes necessary when one acknowledges how common beliefs are easily falsified by data. A widespread misconception is that inequality is

skyrocketing; au contraire, inequality is not increasing at all, and it has in fact been decreasing for quite a long time, perhaps for the first time in the last 200 years¹⁰ (Milanovic, 2012). Our everyday perception is not misplaced, though: inequality has indeed increased *within* countries during the last decades. However, since the greatest role in overall global inequality is not played by internal inequality within individual countries – referred to by Milanovic (2012, p. 19) as <<the “class” component to global inequality>> - but rather by *inequality between countries*, which has been steadily declining for some time now and is referred to by Milanovic as <<the “location” component>>. Furthermore, said convergence is not even as recent – about two decades ago – as we would have it if we counted each country as one¹¹: indeed, if we assigned weights to each country according to its population, we would see that the beginning of such a process dates back almost half a century. This also reveals the importance of what was discussed in the previous section: when speaking about inequality, results are strongly dependent on what is being measured and how. These two opposite phenomena - a growing *inequality within countries* and an even more quickly decreasing *inequality between countries* - are a consequence of the big winners of the so-called age of globalization (Milanovic, 2012) that took place during the last half a century: the world’s very rich (those at the top of both national and global income distributions¹²) and the middle classes of developing countries, including about a third of the global population. Specifically, during the last two decades, these two groups saw an increase in their incomes of respectively 60% and 70%¹³. The main losers – on the other hand – have been those belonging to what might be referred to as the global upper-middle class, which includes the middle-classes of areas ranging from Latin America and Eastern Europe to the Western World and whose incomes have largely stagnated in the same timeframe. Milanovic (2012) estimates that more than fifty percent of one’s income depends on the average income of the country where the person lives. The relative weight of the class and location components in explaining inequality has not been constant in time: indeed, the proportions have flipped in the last 150 years, with class explaining more than 2/3 of global inequality in 1870 and less than 1/3 now.

In his classic paper, Kuznets (1955) suggested that growing inequality was a typical feature of economies that are undergoing industrialization, whereas mature economies show more egalitarian trends. Following in this tradition, Berry, Harpham & Elliott (1994) argued that in

¹⁰ Milanovic (2012, p. 17) – after acknowledging that <<*it is a question impossible to answer with any precision, because we do not have household surveys or any other reliable sources of income data for these times*>> - briefly reconstructs the development of inequality during the last couple of centuries: <<*since the Industrial Revolution, which launched a score of European countries and their overseas off-shoots onto a path of faster growth, global inequality kept on rising until the mid-20th century. There was a period of more than a century of steady increase in global inequality, followed by perhaps fifty years (between the end of the Second World War and the turn of the 21st century) when global inequality remained on a high plateau, changing very little [...]. It is only in the early 21st century that global inequality might have commenced its downward course*>>.

¹¹ That is, putting India and Luxembourg on the same level.

¹² Identified by Milanovic (2012) in <<*the richest 12% of Americans*>>, <<*between 3 and 6 percent of the richest Britons, Japanese, Germans, and French*>>, <<*The richest 1% of the embattled Euro countries of Italy, Spain, Portugal and Greece*>> and <<*the richest 1% of Brazilians, Russians and South Africans*>>.

¹³ With the exception of the poorest 5% – whose income have gone largely unchanged – also the bottom third of the world’s population has seen a relevant increase, between 40% and 70%, with high numbers escaping absolute poverty meanwhile.

the history of American macro-economic development, there have been four great surges¹⁴ in inequality with major structural changes, high demand for new skills (Williamson & Lindert, 1980) and high profits in new industries¹⁵. Each surge begins with pro-business governments trying “to set the economy right” in response to the stagflation crisis, and it is then followed in turn by an egalitarian backlash against said policies¹⁶. Unemployment – arguably one of the best proxies for inequality within a society – is a typical occurrence during periods of structural adjustment and is frequently seen as the consequence of a mismatch between skills and institutions developed for older technologies and those necessary for the new ones (Freeman, 2002). Schumpeter argued that aggregate statistics of Gross National Product or industrial production hide underlying trends in the economy and, indeed, unemployment is a common occurrence even when the structural adjustment produces overall economic growth: different factors might intertwine in rising inequality, and the unemployment for those who are laid off by the advent of new technologies often combines with growing incomes for those whose skills are more highly-valued by new market conditions¹⁷. Indeed, each *<<wave of technical change brings with it many social benefits in the form of new, more skilled occupations and professions and higher standards of living for many people>>* but also *<<high social costs in the forms of erosion of old skills and occupations and the decline of some older industries, services and industrial areas>>* (Freeman, 2004, p. 250).

This is a hint of how economic cycles might influence inequality, but there is another side of the coin that we should not forego: how social inequality impacts economic cycles and *<<whether less developed countries with higher income inequality are less sheltered from economic fluctuations and suffer a wider macroeconomic volatility>>* (Bosi, 2006). It is certainly well known *<<that inequality has a strong impact on economic growth, although it is not clear if this impact is positive or negative>>* (Borissov et al., 2020, p. 400). Tylecote (1992) and Persson & Tabellini (1994) argue that inequality harms long-term growth both in developed and less developed countries. Ghiglino (2005) and Ghiglino & Venditti (2011) find that inequality increases macroeconomic volatility when risk tolerance is a convex function, whereas in the opposite scenario it is equality that favors macroeconomic volatility.

Identifying the specific drivers of inequality is not an easy task since - from a purely economic perspective - increases in earnings inequality are a normal consequence of a functioning market economy (Welch, 1999). Indeed, Iammarino et al. (2019) argue that innovation might be a driver for regional divergence in income levels in Europe, whereas Pinheiro et al. (2022) find that only the most economically advanced European regions have the opportunity to diversify into highly complex activities, creating a spatial inequality feedback loop. However, many

¹⁴ In the 1830's, 1880's, 1920's, and 1980's.

¹⁵ Examples are Microsoft in the 1980's, Ford in the 1920's, the steel industry in the 1880's and the railway industry in the 1840's.

¹⁶ The New Deal in the 1930's; the Anti-Trust Legislation and the Homestead Act during the 19th century surges.

¹⁷ Freeman (2004) mentions engine drivers and fitter in the 19th century, electricians around the turn of the century, assembly line workers in the 1940's, and software engineers and programmers in the 1980's. However, it must be kept in mind that – as all social phenomena – these occurrences are strongly effected by the institutional context: firms in the electronics' industry in Japan during the 1980's effectively used mutual agreements in order to avoid the wage-push effect that would have been expected during a similar technological boom.

authors – notably Atkinson (1997) and Austen (1999) – acknowledge that social norms are fundamental as concerns the persistence and the tolerance of market-generated inequality, with international differences in social norms relating to inequality potentially explaining the differing patterns between countries. Indeed, institutional factors are seemingly important, with some authors emphasizing in particular the role of trade unions: strong centralized unions are better equipped to recognize negative externalities and account for them when negotiating with their counterparts, even when such externalities are a consequence of the unions' own bargaining, as when wage premiums result in inflation and reduced employment (Dreher & Gaston, 2007). Freeman (1998) shows indeed that there is some evidence backing increases in wage inequality as unionization decreases, and Fortin & Lemieux (1997) estimate that de-unionization explains about a third of the increase in inequality for U.S. male workers. Similarly, DiNardo & Lemieux (1997) attribute the difference in earnings inequality between the United States and Canada to the greater degree of de-unionization of the former compared to the latter.

One of the drivers of inequality that receives the most attention is certainly globalization. There are essentially two alternative perspectives on the relationship between globalization and inequality. The first one argues that globalization worsens inequality by putting a burden on the welfare state and stimulating what many authors refer to as a “race to the bottom”¹⁸. Several potential factors have been identified: Tanzi (1996) argues that increased mobility of capital leads to a reduced tax base but also necessitates a higher taxation of labor, thus negatively impacting inequality from two different directions; Blankman & Freeman (1994, p. 30) underline that the belief that social protection might harm economic outcomes *<<by creating incentives for market participants to behave differently than they otherwise would>>*¹⁹ could create political pressure for the reduction of welfare programs. The alternative view is that social policies tend to react to potentially negative consequences of globalization for vulnerable workers, whose acquiescence is implicitly bought through cash transfers and favorable income tax systems (Dreher & Gaston, 2008). The heterogeneous impact of globalization on economic growth triggered the development of a regional approach to the study of inequality, rejecting the neoclassical model where – assuming perfect competition and factor mobility - congestion and the high cost of production factors in more developed regions lead to convergence between areas. Such a view is common to both New Economic Geography and Evolutionary Economic Geography, albeit leading the two schools to radically different solutions, with the

¹⁸ Some authors have differentiated between subcomponents of what is commonly referred to as “globalization”, for example exploring the consequences of political and social integration separately: in this sense, Dreher & Gaston (2008, p. 517) find that both are important for income inequality and that *<<in the absence of restrictions on capital mobility, a country is more likely to competitively lower taxes or offer subsidies to attract investment, the closer is a potential host country's culture to that of a source country and the easier it is to exchange information. Lower taxes may also lower social standards and this is one channel through which the social dimension of globalisation may be important for income inequality. On the other hand, political integration may ameliorate a potential “race to the bottom”, which may be induced by economic globalization>>* and therefore conclude that *<<while economic globalisation may increase inequality, political globalisation could actually serve to reduce it>>*.

¹⁹ Welfare could lead a worker to choose leisure instead of work, lowering output; public housing could limit workers' mobility and negatively impact labor allocation; wage legislation could produce inefficiently high labor cost; social assistance programs may divert capital from more rewarding investments, etc.

former arguing for space-neutral and the latter for space-based policies (Asadi & Samimi, 2023).

Another driver that has been thoroughly studied is the share of capital in net income, whose relevance was strongly popularized by Piketty (2013), who argued for the unavoidable concentration of wealth – and therefore the growth of inequality – whenever the rate of return on capital is greater than the rate of economic growth over the long term²⁰. An increase in the capital share (Piketty's α) would not by itself increase inequality if the underlying distribution of capital were egalitarian: indeed, it could very well lead to a *decrease* in inequality depending on such distribution. However, the actual distribution of capital assets is in fact extremely skewed²¹, leading some authors <<to argue in favor of equalization of ownership of assets among individuals>> in order to provide <<a realistic agenda for fighting inequality>> (Milanovic, 2016b, p. 3).

An interesting strand of research focuses on the relationship between natural resources and inequality. Alternatively, either resource abundance (Yesner, 1980) or *resource stress* (Cohen, 1981) has been considered the original factor in promoting social differentiation even in the most remote phases of human civilization (Price & Feinman, 1995). The observation that resource wealth might often turn out as a curse more than a blessing is certainly not new: almost two centuries ago, Cairns (1859) described the peculiar effects of the ongoing Australian gold rush, anticipating what would later be referred to as *the Dutch Disease*²². Quantitative evidence showing a link between resource abundance and income inequality also dates back at least to Adelman (1973), who also finds that the latter is less prevalent in those resource-abundant countries where health and education are backed by governmental programs. More recently, Ross (2007, p. 239) notes that <<resource rich countries appear to be neither more or less unequal, on average>> but also acknowledges that such a link might be hidden by the lack of reliable data for most of those countries (hinting at a <<strong negative relationship between a country's dependence on mineral rents and the amount of data we have about its inequality levels>>) and by the difficulty in assessing inequality between groups (such as between rural and urban workers or between men and women). Institutions clearly play a strong role, either through direct distribution of dividends (the Alaska Permanent Fund is perhaps the best-known

²⁰ The asserted inevitability of wealth concentration in our current mode of capitalism has been criticized – among others - by Ray (2015) and Ng (2015) who noted that the growth of the capital share also requires that savings of non-capital income are greater than consumption of capital income. In response, Milanovic (2014) declared that – despite being formally correct – this critique is seldom relevant in the real-world since capitalists are capitalists because they do not consume all their surplus, ending up investing all or most of the income generated by capital.

²¹ Milanovic (2016b, 4) notes that in the United States <<Gini of income from capital [...] is around 80, while similarly calculated Gini of labor income is around 40>> and acknowledges that <<the situation is identical in other countries>>. He also argues that <<30 to 40 percent of Americans have zero capital assets, and hence draw no income from ownership>>.

²² Concerning inequality, sectoral shifts generated by a resource boom should be neutral, but limits on intersectoral labor mobility (e.g. workers in agriculture or manufacturing are unable to move into services, or women and older workers find it harder to move from manufacturing to construction) might – and usually do - impact income distribution (Ross, 2007).

example²³) or, indirectly, through a growth in government jobs, which usually leads to wage compression and reduced inequality (Milanovic, 2000). The role of government is acknowledged by Gylfason & Zoega (2003) too, when they suggest that a rise in income inequality might be offset by heavy taxation of resource rents relative to wages in other sectors²⁴. However, resource wealth itself often prevents such forms of redistributive taxation since governments might feel like they no longer need to tax citizens' income (Bornhorst, Gupta & Thornton, 2009), depriving themselves of a generally progressive form of taxation; moreover, a reduced taxation often leads to weakened institutions, which in turn perpetuate inequality, sometimes even after resources have been entirely depleted (Ross, 2006).

Unsurprisingly, the recent pandemic event started a new line of research investigating the impact of COVID-19 on inequality²⁵. A widespread belief is that the pandemic has increased global inequality, impacting the poor more than the wealthy. The event is still too recent to draw definitive conclusions on its impact - also because of the lack of comparisons, since pandemics of such a magnitude are extremely rare and quite different from one another as concerns their development, the context and the reactions. However, the afore-mentioned belief does not seem to be true, for both demographic and economic reasons: rich countries had both a much older population, and much more to lose than poor countries (Deaton, 2021). Sayed & Peng (2021) argue that previous pandemics contributed to a decline in income inequality in the following years, but that the impact of the last one is still unclear because of its peculiarity: fatalities are concentrated in older age groups, thus not impacting labor availability or productivity in itself, but indirect effects - chiefly through public policies, such as lockdowns - might push in different directions through reduced consumption, increase in savings, high unemployment rates, and an increase in public debt. This is consistent with Almeida et al. (2020) whose simulation separates the effect of the pandemic and the impact of subsequent policy responses in Europe, arguing that an estimated increase of the Gini coefficient of 3.6% absent any policy contrasts with an actual fall of 0.7% after said policies were implemented. Consistently, Clark, d'Ambrosio & Lepinteur (2021) find an increase in inequality in France, Germany, Italy and Spain during the first acute phase of the pandemic (between January and May 2020) and a subsequent fall below pre-COVID levels in the following months, and also confirm Grabka (2021)'s findings of income losses suffered by the self-employed (leading to downward movements from the upper half of the income distribution) in Germany, generalizing them to other EU countries.

²³ Although Kozminski & Baek (2017) are skeptical about the Permanent Fund Dividend's equalizing effect on incomes.

²⁴ A recent report claims that taxes and royalties paid by the largest international mining companies amount to 43% of their profits (ICMM, 2018). Lund (2018) highlights that about 80% of the value generated by Norwegian offshore oil works is obtained by the government through non-carried interest and rent taxation.

²⁵ Clearly, a specular approach also developed, dealing with the impact of inequality on the spread of the virus during the pandemic; however, it would be beyond the scope of this review to examine such a line too.

5 Conclusion

In this article, we have explored the evolution and the current state of inequality-related literature. Despite having been a popular topic for quite some time now, we believe that there are some major points that need to be clarified yet.

The most important one is probably what we mean – or, better yet, what we *want to mean* – when we speak about inequality. As social scientists, we need to keep in mind that mathematics should be the means to pursue our research goal scientifically, not the goal itself: indeed, our interest in inequality derives not from the need to understand its statistical meaning, but from the observation that society claims to have a problem with inequality²⁶. Consequently, we need first to understand where the problem lies exactly and then approach the specific meaning that comes with the – otherwise neutral - term *inequality*: this shall be pursued with scientific – and mathematical – rigor of course, but we should not be fooled by thinking that the inequality problem is strictly a mathematical one. In practical terms, our first question should be “Do people perceive as more unequal a society where one holds all the resources and everyone else is *equally* poor, or a society where half the people is not necessarily ultra-rich but very well-off, in spite of another half that is still very poor?” and select our measures of inequality correspondingly, rather than choosing mathematical measures first-hand and try to impose them on our readers.

This goes hand in hand with our brief exploration of the issue of inequality vs poverty: in the presence of absolute poverty (meaning a state of physical deprivation), one could very well argue that people would perceive as more unjust – and, thus, unequal – a society where almost everybody is equally starving and a few ones live in luxury, rather than another one where half of the population is at least able to survive; on the other hand, though, where starvation has been fought off and is now virtually non-existent, poverty has become relative and actually originates from inequality, with income and wealth distribution dictating prices, social mobility, but also those social (i.e.: non-primary) needs, that Sen (1999) deems as necessary to function at a socially acceptable level. The perception of injustice is made all the more relevant when one acknowledges the weight that the birthplace of an individual has in determining his lifetime income, especially since this one variable is not chosen by the individual himself: <<*The locational premium is very large: compared to living in the poorest country in the world (DR Congo), a person gains more than 350% if she lives in the United States, more than 160% if she lives in Brazil, but only 32% if she lives in Yemen*>> (Milanovic, 2015, p. 458). Interestingly, the weight that such a “*locational premium*” – or “*citizenship dividend*” - carries is reminiscent of Rawls (1999)’s *veil of ignorance*: a metaphorical scenario where each individual is randomly handed at birth certain characteristics that will determine his socio-economic destiny. Practical implications are relevant as well: those countries that offer such a dividend tend to enforce their citizens’ privileged status by limiting access to those born in less fortunate places. In the words of Milanovic (2012), <<*there are 7 points in the world where rich and poor countries are geographically closest to each other [...]. You would not be surprised to find out that all these 7 points have mines, boat patrols, walls and fences to prevent free movement*

²⁶ Welch (1999, p. 5) declares that <<*inequality is destructive whenever the low-wage citizenry views society as unfair, when it views effort as not worthwhile, when upward mobility is viewed as impossible or as so unlikely that its pursuit is not worthwhile*>>.

of people. The rich world is fencing itself in, or fencing others out. But the pressures of migration are remaining strong, despite the current crisis, simply because the differences in income levels are so huge>>.

We do not delude ourselves by thinking that such questions will grant a unanimous answer and settle any debate on inequality, but the approach will certainly shed some light and allow researchers to focus on those measures that actually describe what they should investigate, rather than investigate areas where measures chosen *a priori* have led them. Indeed, policy implications could be radically different depending on one's adherence to the theories outlined in the previous pages, and considerations need to extend well beyond the scope of economics alone: even without venturing in the realm of ethics for its own sake, policy-makers need to take into account popular perceptions of justice – and, therefore, resources distribution – in order to preserve social peace and trust in institutions. However, such political considerations might very well conflict with economic ones: if one believes that inequality is the foundation of economics itself – or, less radically, a motor for growth – it will certainly be hard to reconcile those two aspects. On the other side of the spectrum, as well, a policy-maker that acknowledges a role in economic growth for redistributive policies will still need to walk on eggshells and carefully select the way to assess inequality: as we have discussed, the conclusions if one decides to measure inequality through a Gini coefficient might – and certainly will – be drastically different than if he had chosen, say, a measure of range. To conclude, we have to acknowledge that the obvious limitations of the theories and measures briefly outlined in this review are not due to a lack of interest or research, but to the inextricable multidimensionality of the topics that they relate to.

References

- Adelman, I. (1973). *Economic Growth and Social Equity*. Stanford University Press.
- Aguiar, M., & Bils, M. (2015). Has consumption inequality mirrored income inequality?. *American Economic Review*, *105*(9), 2725-2756.
- Almeida, V., Barrios Cobos, S., Christl, M., De Poli, S., Tumino, A., & Van Der Wielen, W. (2020). *Households' income and the cushioning effect of fiscal policy measures during the Great Lockdown* (No. 06/2020). JRC Working Papers on Taxation and Structural Reforms.
- Anand, S., & Sen, A. (2000). The income component of the human development index. *Journal of human development*, *1*(1), 83-106.
- Asadi, S. P., & Jafari Samimi, A. (2023). Local development challenge in lagging-behind areas: insights from new & evolutionary economic geography. *GeoJournal*, *88*(1), 397-407.
- Atkinson, A. B. (1997). Bringing income distribution in from the cold. *The Economic Journal*, *107*(441), 297-321.
- Atkinson, A. B. (2015). *Inequality: What can be done?*. Harvard University Press.
- Atkinson, A. B., & Bourguignon, F. (2001). Poverty and inclusion from a world perspective. *Governance, equity and global markets*, 179-192.
- Austen, S. (1999). Norms of inequality. *Journal of Economic Issues*, *33*(2), 435-442.
- Berry, B. J., Harpham, E. J., & Elliott, E. (1995). Long swings in American inequality: the Kuznets conjecture revisited. *Papers in Regional Science*, *74*(2), 153-174.
- Blank, R. M., & Freeman, R. B. (1994). Evaluating the connection between social protection and economic flexibility. In *Social protection versus economic flexibility: is there a trade-off?* (pp. 21-42). University of Chicago Press.
- Bornhorst, F., Gupta, S., & Thornton, J. (2009). Natural resource endowments and the domestic revenue effort. *European Journal of Political Economy*, *25*(4), 439-446.
- Bosi, S., & Seegmuller, T. (2006). Optimal cycles and social inequality: What do we learn from the Gini index?. *Research in Economics*, *60*(1), 35-46.
- Brückner, M., & Lederman, D. (2018). Inequality and economic growth: the role of initial income. *Journal of Economic Growth*, *23*, 341-366.
- Cairns, J. E. (1859). The Australian Episode. *Frazer's Magazine*, 81-104.
- Clark, A. E., d'Ambrosio, C., & Lepinteur, A. (2021). The fall in income inequality during COVID-19 in four European countries. *The Journal of Economic Inequality*, *19*, 489-507.
- Conard, E. (2016). *The upside of inequality: How good intentions undermine the middle class*. Penguin.
- Cowell, F. (2011). *Measuring inequality*. Oxford University Press.

- Cutler, D. M., & Katz, L. F. (1992). Rising Inequality? Changes in the Distribution of Income and Consumption in the 1980's. *The American Economic Review*, 82(2), 546.
- Deaton, A. (2021). *Covid-19 and global income inequality* (No. w28392). National Bureau of Economic Research.
- DiNardo, J., & Lemieux, T. (1997). Diverging male wage inequality in the united states and ganada, 1981–1988: Do institutions explain the difference?. *ILR Review*, 50(4), 629-651.
- Dreher, A., & Gaston, N. (2007). Has globalisation really had no effect on unions?. *Kyklos*, 60(2), 165-186.
- Dreher, A., & Gaston, N. (2008). Has globalization increased inequality?. *Review of International Economics*, 16(3), 516-536.
- Dworkin, R. (1981). What is equality? Part 2: Equality of resources. *Philosophy & public affairs*, 283-345.
- Fisher, J. D., Johnson, D. S., & Smeeding, T. M. (2013). Measuring the trends in inequality of individuals and families: Income and consumption. *American Economic Review*, 103(3), 184-188.
- Fortin, N. M., & Lemieux, T. (1997). Institutional changes and rising wage inequality: Is there a linkage?. *Journal of economic perspectives*, 11(2), 75-96.
- Freeman, R. B. (1998). War of the models: which labour market institutions for the 21st century?. *Labour Economics*, 5(1), 1-24.
- Freeman, C. (2002). Social inequality, technology and economic growth. In *Technology and In/equality* (pp. 149-171). Routledge.
- Freeman, C. (2004). Income inequality in changing techno-economic paradigms. *Globalization, economic development and inequality*, 243-257.
- Friedman, M. (1957). The permanent income hypothesis. In *A theory of the consumption function* (pp. 20-37). Princeton University Press.
- Ghiglini, C. (2005). Wealth inequality and dynamic stability. *Journal of Economic Theory*, 124(1), 106-115.
- Ghiglini, C., & Venditti, A. (2011). Wealth distribution and output fluctuations. *Journal of Economic Theory*, 146(6), 2478-2509.
- Grabka, M. M. (2021). Income inequality in Germany stagnating over the long term, but decreasing slightly during the coronavirus pandemic. *DIW Weekly Report*, 11(17/18), 125-133.
- Güvenen, F., & Kaplan, G. (2017). *Top income inequality in the 21st century: Some cautionary notes* (No. w23321). National Bureau of Economic Research.
- Gylfason, T., & Zoega, G. (2003). Inequality and economic growth: Do natural resources matter?. *Inequality and growth: Theory and policy implications*, 1, 255.

- Hale, T. (2003). The Theoretical Basics of Popular Inequality Measures. Online Computation of Examples. University of Texas Inequality Project.
- Hassett, K. A., & Mathur, A. (2012). A new measure of consumption inequality. *AEI Economic Studies*, (2).
- Iammarino, S., Rodriguez-Pose, A., & Storper, M. (2019). Regional inequality in Europe: evidence, theory and policy implications. *Journal of economic geography*, 19(2), 273-298.
- International Council on Mining and Metals (ICMM) (2018). ICMM Members' Tax Contribution. ICMM, London
- Kozminski, K., & Baek, J. (2017). Can an oil-rich economy reduce its income inequality? Empirical evidence from Alaska's Permanent Fund Dividend. *Energy Economics*, 65, 98-104.
- Kuznets, S. (1955). International differences in capital formation and financing. In *Capital formation and economic growth* (pp. 19-111). Princeton University Press.
- Lund, D. (2018). *Increasing resource rent taxation when the corporate income tax is reduced?* (No. 03/2018). Memorandum. Department of Economics, University of Oslo
- Mayor, T. H. (2015). Income inequality: Piketty and the neo-Marxist revival. *Cato J.*, 35, 95.
- Milanović, B. (2000). *Determinants of cross-country income inequality: An 'augmented' Kuznets hypothesis* (pp. 48-79). Palgrave Macmillan UK.
- Milanovic, B. (2012). Global income inequality by the numbers: in history and now--an overview--. *World Bank Policy Research Working Paper*, (6259).
- Milanovic, B. (2014), "Where I disagree and agree with Debraj Ray's critique of Piketty's Capital in the 21s Century", <http://glineq.blogspot.com/2014/06/where-i-disagree-and-agree-withdebraj.html>
- Milanovic, B. (2015). Global inequality of opportunity: How much of our income is determined by where we live?. *Review of Economics and Statistics*, 97(2), 452-460.
- Milanovic, B. (2016). *Global inequality: A new approach for the age of globalization*. Harvard University Press.
- Milanovic, B. (2016). *Increasing capital income share and its effect on personal income inequality* (No. 663). LIS Working Paper Series.
- Ng, Y. K. (2015). Is an increasing capital share under capitalism inevitable?. *European Journal of Political Economy*, 38, 82-86.
- OECD (2021). *Health at a Glance 2021: OECD Indicators*. OECD Publishing, Paris.
- Nozick, R. (1974). *Anarchy, state, and utopia*. New York: Basic Books.
- Peragine, V., & Ferreira, F. (2015). Equality of opportunity: Theory and evidence. *World Bank Policy Research Paper*, 7217.

- Persson, T., & Tabellini, G. (1994). Is Inequality Harmful for Growth?. *American Economic Review*, 84(3), 600-621.
- Peterson, E. W. F. (2017). Is economic inequality really a problem? A review of the arguments. *Social Sciences*, 6(4), 147.
- Piketty, T. (2013). *Capital in the 21st Century*. Cambridge, MA: President and Fellows, Harvard College.
- Piketty, T., & Saez, E. (2014). Inequality in the long run. *Science*, 344(6186), 838-843.
- Pinheiro, F. L., Balland, P. A., Boschma, R., & Hartmann, D. (2022). The dark side of the geography of innovation: relatedness, complexity and regional inequality in Europe. *Regional Studies*, 1-16.
- Poterba, J. M. (1989). Lifetime incidence and the distributional burden of excise taxes. *The American Economic Review*, 79, 325-330.
- Rawls, J. 1971. *A Theory of Justice*. Harvard University Press, Cambridge, MA, rev. ed., 1999.
- Ray, D. (2015). Nit-Piketty: A comment on Thomas Piketty's *Capital in the Twenty First Century*. In *CESiifo Forum* (Vol. 16, No. 1, pp. 19-25). München: ifo Institut-Leibniz-Institut für Wirtschaftsforschung an der Universität München.
- Ross, M. L. (2007). How mineral-rich states can reduce inequality. *Escaping the resource curse*, 23775, 237-55.
- Rousseau, J. J. (1754). *A Discourse on a Subject proposed by the Academy of Dijon: What is the Origin of Inequality among Men, and is it authorised by Natural Law?*. *The social contract and discourses*.
- Saez, E. (2018). Striking it richer: The evolution of top incomes in the United States. In *Inequality in the 21st Century* (pp. 39-42). Routledge.
- Sayed, A., & Peng, B. (2021). Pandemics and income inequality: a historical review. *SN Business & Economics*, 1, 1-17.
- Schumpeter, J. A. (1939). *Business cycles*. New York: Mcgraw-hill.
- Sen, A. (1999). *Commodities and capabilities*. OUP Catalogue.
- Simmel, G. (1907). 1978. *The philosophy of money*, 1366-1414.
- Slesnick, D. T. (1993). Gaining ground: poverty in the postwar United States. *Journal of political Economy*, 101(1), 1-38.
- Stiglitz, J. E. (2013). Equal opportunity, our national myth. *New York Times*, 16.
- Tanzi, M. V. (1996). *Globalization, tax competition and the future of tax systems*. International Monetary Fund.

- Testart, A. (1982). The Significance of Food Storage among Hunter-Gatherers: Residence Patterns, Population Densities, and Social Inequalities. *Current Anthropology*, 23(5).
- Thompson, J., & Leight, E. (2011). Searching for the supposed benefits of higher inequality: Impacts of rising top shares on the standard of living of low and middle-income families. *Political Economy Research Institute Working Paper Series*, 258, 1-34.
- Tylecote, A. (1992). History as a forecasting tool: the future of the European economy in a long-wave/long-cycle perspective. *Review of Political Economy*, 4(2), 226-248.
- United States Census Bureau. (2018). American community survey.
- Watson, W. (2015). The Inequality Trap: Fighting Capitalism Instead of Poverty.
- Welch, F. (1999). In defense of inequality. *American Economic Review*, 89(2), 1-17.
- Williamson, J. G., & Lindert, P. H. (1980). Long-term trends in American wealth inequality. In *Modeling the distribution and intergenerational transmission of wealth* (pp. 9-94). University of Chicago Press.

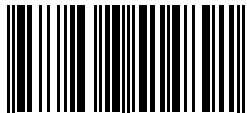
Ultimi Contributi di Ricerca CRENoS

I Paper sono disponibili in: <http://www.crenos.unica.it>

- 23/12 *Luciano Mauro, Francesco Pigliaru*, “Italy’s National Recovery and Resilient Plan: Will it Narrow the North-South Productivity Gap?”
- 23/11 *Fabrizio Antolini, Samuele Cesarini, Giorgio Garau*, “The economic impact of the tourism sector on the overall Italian economy: An Input-Output Approach”
- 23/10 *Giorgio Garau, Andrea Karim El Meligi*, “The Impact of the Pandemic and War on Surplus Redistribution Mechanisms: A Sectoral Analysis of France and Italy”
- 23/09 *Maria Giovanna Brandano, Alessandra Faggian, Adriana C. Pinate*, “The impact of COVID-19 on the tourism sector in Italy: a regional spatial perspective”
- 23/08 *Fabrizio Cipollini, Giampiero M. Gallo, Alessandro Palandri*, “Modeling and evaluating conditional quantile dynamics in VaR forecasts”
- 23/07 *Ugo M. Gragnolati, Luigi Moretti, Roberto Ricciuti*, “Early railways and industrial development: Local evidence from Sardinia in 1871–1911”
- 23/06 *Giampiero M. Gallo, Demetrio Lacava, Edoardo Otranto* “Volatility jumps and the classification of monetary policy announcements”
- 23/05 *Diego Dessì, Raffaele Paci*, “The impact of Global Value Chains participation on countries’ productivity”
- 23/04 *Edoardo Otranto, Luca Scaffidi Domianello*, “On the relationship between Markov Switching inference and Fuzzy Clustering: A Monte Carlo evidence”
- 23/03 *Mario Agostino Maggioni, Emanuela Marrocu, Teodora Erika Uberti, Stefano Usai*, “The role of localised, recombinant and exogenous technological change in European regions”
- 23/02 *Bianca Biagi, Laura Ciucci, Claudio Detotto, Manuela Pulina*, “University study programmes and students dynamics”
- 23/01 *Giovanni B. Concu, Claudio Detotto, Marco Vannini*, “Drivers of intentions and drivers of actions: willingness to participate versus actual participation in fire management in Sardinia, Italy”
- 22/06 *Alberto Tidu, Stefano Usai, Frederick Guy*, Measuring spatial dispersion: an experimental test on the M-index
- 22/05 *Luca Scaffidi Domianello, Giampiero M. Gallo, Edoardo Otranto*, “Smooth and Abrupt Dynamics in Financial Volatility: the MS-MEM-MIDAS”
- 22/04 *Claudio Detotto, Riccardo Marselli, Bryan C. McCannon, Marco Vannini*, “Experts and Arbitration Outcomes: Insights from Public Procurement Contract Disputes”
- 22/03 *Gerardo Marletto, Cécile Sillig*, “Global influence and national diversity in socio-technical transitions: a sectoral taxonomy”
- 22/02 *Federico Aresu, Emanuela Marrocu, Raffaele Paci*, “Public capital and institutions’ quality in the Italian regions”
- 22/01 *Gabriele Cardullo, Maurizio Conti, Andrea Ricci, Sergio Scicchitano, Giovanni Sulis*, “On the Emergence of Cooperative Industrial and Labor Relations”
- 21/11 *Gianfranco Atzeni, Luca G. Deidda, Marco Delogu, Dimitri Paolini*, “Effects of migration with endogenous labor supply and heterogeneous skills”
- 21/10 *Alberto Tidu, Stefano Usai, Frederick Guy*, “Agglomeration in manufacturing and services: an experimental application of a distance-based measure to Sardinia”
- 21/09 *Andrea Caria, Fabio Cerina, Marco Nieddu*, “Political Selection and Monetary Incentives in Local Parliamentary Systems”
- 21/08 *Giorgio Garau, Alessio Tola, Maria Veronica Camerada, Salvatore Lampren, Silvia Carrus*, “Economic and social polarization dynamics in the EU”

www.crenos.unica.it

ISBN 9788868514891



9 788868 514891 >