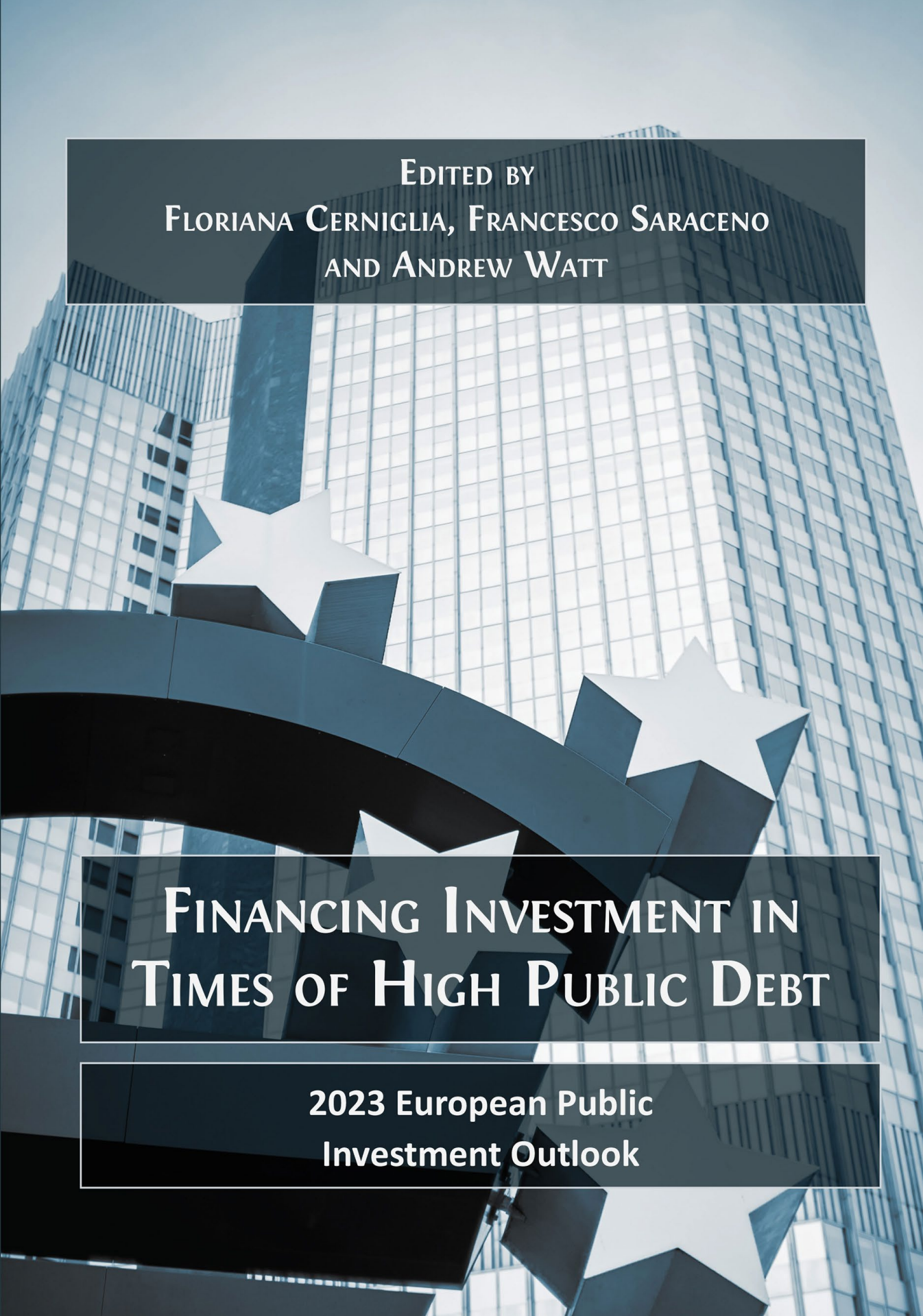

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and Andrew Watt

Financing Investment in Times of High Public Debt

2023 European Public Investment Outlook

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10. In Search of Lost Time: An Ensemble of Policies to Restore Fiscal Progressivity and Address the Climate Challenge

Demetrio Guzzardi, Elisa Palagi, Tommaso Faccio, and Andrea Roventini

The European Union needs to raise significant resources to finance a just green transition. At the same time, there is a widespread fiscal regressivity in many EU countries. Indeed, recent empirical evidence shows that the tax systems of many EU members are characterised by low degrees of progressivity, with high-income groups paying lower effective tax rates vis-à-vis middle- and low-income classes. In order to jointly tackle such issues, we propose an ensemble of tax policies at the EU level that are grounded on recent proposals advanced in the literature. This fiscal reform includes a wealth tax targeting the top 1% of wealth holders, a tax on unrealised capital gains, and an increase of the minimum corporate tax. Our first estimates suggest that these measures can generate substantial yearly revenues in the order of 1.9%–2.9% of EU GDP. Such resources can contribute to the funding of the additional climate mitigation and adaptation policies required to tackle the climate emergency, while reducing inequality, thus contributing to put EU economies on sustainable and inclusive growth pathways.

10.1 Introduction

The last decades have witnessed trends of increasing income and wealth inequality in most countries of the European Union (EU), accompanied by sluggish growth (Piketty 2014; Blanchet et al. 2022; Guzzardi et al. 2023; Blanchet and Martínez-Toledano 2023). Such concentration of income and wealth is favoured by inequitable tax systems (Roine et al. 2009; Rubolino and Waldenström 2020). Indeed, not only have top income-tax rates progressively fallen but the globalised economic system has also allowed for the existence of several loopholes at the disposal of multinationals and billionaires to move

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their capital and elude taxation (Zucman 2014). This has resulted in an international race to the bottom, which has further reduced tax rates for corporate and personal income.

At the same time, the tall societal challenges of climate change require large amounts of resources to finance mitigation and adaptation policies. Indeed, the European Union has committed to the ambitious goals to cut its greenhouse-gas (GHG) emissions by at least 55% by 2030. Moreover, the costs of climate-change impacts and mitigation policies are unequally distributed across the population (Markkanen and Anger-Kraavi 2019; Taconet et al. 2020), disproportionately hitting those in the bottom part of the income distribution. At the same time, the most affluent individuals are responsible for the bulk of the emissions in high-income countries (Chancel 2022). Therefore, inequality and climate change need to be jointly addressed.

In this chapter, we first assess how taxation has evolved over the recent decades in developed countries and how it has impacted inequality trends. What emerges is that the degree of progressivity of tax systems has decreased so much that in the USA and in EU countries for which evidence exists, the richest part of society pays lower effective tax rates than the rest of the population. The tax system of the USA and of many EU countries has thus become 'regressive'.

We then present some policy proposals advanced in the literature to restore the progressivity of the tax systems. More specifically, we consider a package of fiscal interventions that can be introduced in the European Union, namely an EU-wide wealth tax, a taxation scheme for unrealised capital gains, and different tools to increase corporate taxation. We discuss how the potential issues related to their implementation can be addressed. Our first estimates show that the proposed tax reform could considerably boost EU tax revenues in the order of 1.9% – 2.9% of EU GDP in 2022. Moreover, our tax reform would reduce income and wealth inequality as each of the proposed measures is able to increase fiscal revenues by taxing the richest individuals of the income distribution without affecting the rest of the population.

By restoring the lost progressivity of their fiscal system, EU governments could reap the necessary resources needed to tackle the climate emergency. We find that the revenues generated by our fiscal package can finance the EU mitigation and adaptation policies while increasing the fiscal burden for the top part of the income distribution, which is responsible for most of EU GHG emissions (Chancel 2022).

The rest of the chapter is organised as follows: Section 10.2 considers recent empirical evidence regarding the progressivity of the tax system in various countries. Section 10.3 examines three primary proposals at the European level to reinstate the lost progressivity of the fiscal system and to fund policies for a fair green transition. These proposals include a wealth tax focused on the wealthiest individuals (Section 10.3.1), a capital-gains tax (Section 10.3.2), and a minimum corporate tax (Section 10.3.3). Section 10.4 discusses how the additional resources collected at the EU level can finance a fair transition towards a greener economy, and, lastly, Section 10.5 concludes the discussion.

10.2 Recent Worrying Trends in Tax Progressivity

Tax progressivity has been decreasing since the 1980s in most regions of the world, although with country specificities. Such a trend is largely due to lower taxes at higher income levels (Peter et al. 2010), and this is particularly the case for advanced countries (Bozio et al. 2018; Saez and Zucman 2019b; Bruil et al. 2022; Guzzardi et al. 2023). In the USA, Saez and Zucman (2019b) estimate tax incidence on the whole income distribution and find that the effective tax rate (obtained by jointly considering different categories of taxes) was steeply progressive in the 1950s but, by 2018, has turned into a flat tax over the income distribution with regressive rates for the richest 0.01%. Figure 10.1 depicts average tax rates for different income groups in the United States. It strikingly shows the freefall in progressivity at the top of the income distribution, with the top 400 of income earners decreasing their tax rate from around 70% in 1950 to just above 20% in 1980. Moreover, Figure 10.1 shows that the regressivity at the very top of the distribution is a recent phenomenon stemming from specific policy choices.

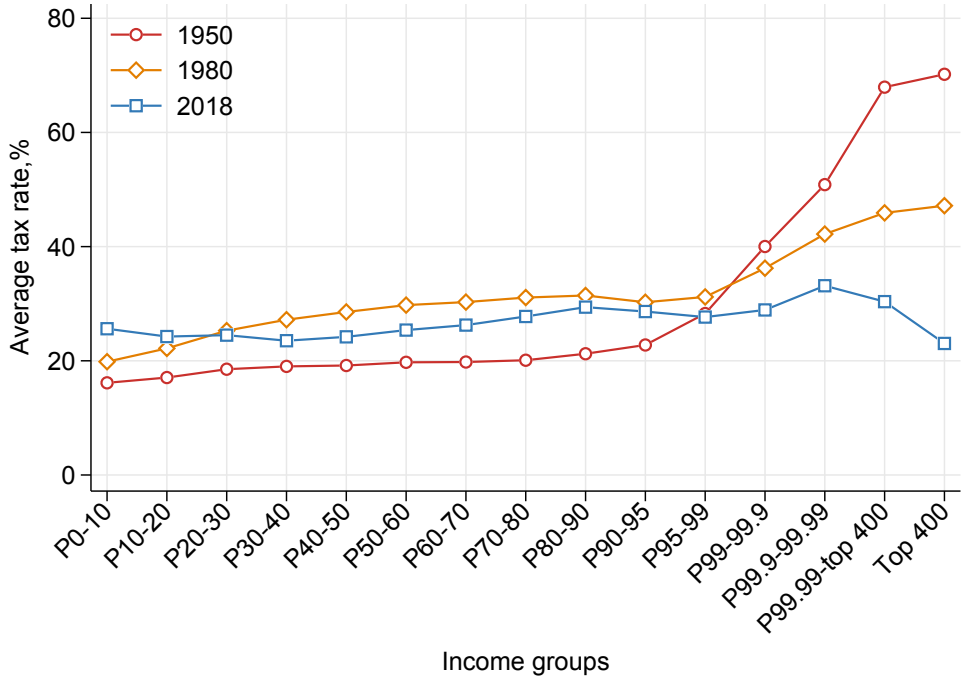

Fig. 10.1 Average Tax Rates by Income Group in the United States.
Note: P0-10 on the x-axis stands for the income group from percentile 0 to percentile 10. Analogously for other income groups.
Source: Data are from Saez and Zucman (2020).

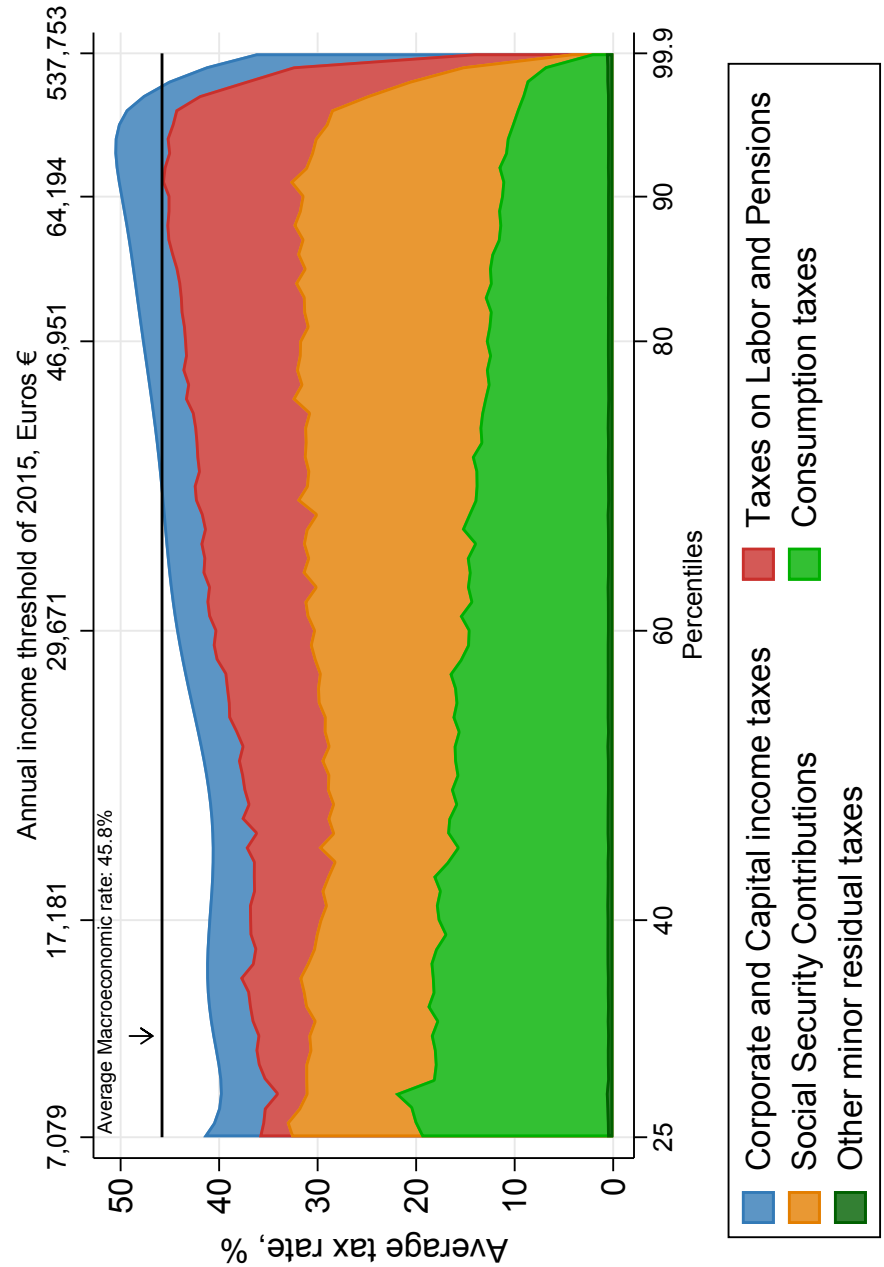

Fig. 10.2 Average Tax Rate by Income Percentiles in Italy, 2015.
Source: Data are from Guzzardi et al. (2022).

Both in France (Bozio et al. 2018) and in the Netherlands (Bruil et al. 2022), there is evidence for a regressive tax system at the top of the income distribution, with the top 1% paying lower effective tax rates than individuals at lower percentiles. In Italy, this regressivity starts at the 95th percentile (Guzzardi et al. 2023), with overall tax rates estimated to fall from a peak of 50% to 35% for the richest individuals (see Figure 10.2).

These results are driven by the composition of income and the related degree of progressivity of taxes on different incomes. First, capital incomes are more heavily concentrated at the top of the distribution, and these are mainly taxed at flat rates. Second, consumption taxes have a regressive impact as they are paid in higher proportions at the bottom and middle of the distribution. Third, the progressivity of the personal income tax is not progressive enough to compensate for flat components of the fiscal system that empirically result as regressive. Indeed, in the case of Italy, Figure 10.2 shows that, although taxes on labour and pensions are mostly progressive, flat consumption taxes are de facto regressive, as propensities to consume are higher at the bottom of the income distribution, in line with empirical findings on consumption (Dynan et al. 2004; Jappelli and Pistaferri 2014; Saez and Zucman 2016; Bunn et al. 2018).

The aforementioned trends are the result of decades of regressive tax reforms. First, the personal income tax, the main source of progressivity in the tax system, has been continuously revised by decreasing the number of tax brackets (Fitoussi and Saraceno 2010) and by reducing top marginal tax rates (Piketty 2014; Piketty et al. 2014), as shown in Figure 10.3 for ten high-income countries. This trend has not been reversed even if recent research contributions have shown that higher top marginal tax rates are desirable. Indeed, in an optimal taxation framework, the top tax rate in the USA and UK could exceed 80% without harming growth, while maximizing government tax revenues (Piketty et al. 2014).[1] This reinforces the evidence on the Laffer curve, which finds a revenue-maximizing tax rate around 70% (Trabandt and Uhlig 2011).

Second, taxation has increasingly shifted from capital to labour. Several countries have introduced the Dual Income Taxation (DIT) system. DIT imposes a lower and less progressive (often flat) tax rate on capital incomes while keeping progressive taxes on labour (an example is the case of Nordic countries in the beginning of the 1990s, see Sørensen 1994; Iacono and Palagi 2022). Furthermore, globalisation has increasingly provided corporations with opportunities to move their profits to countries with lower tax rates (Zucman 2014), thereby incentivizing an international race to the bottom for corporate taxation.

1 See also a related *VoxEU* column: Taxing the 1%: Why the top tax rate could be over 80%" 8-12-2011 by Saez, E., S. Stantcheva, and T. Piketty, available at https://cepr.org/voxeu/columns/taxing-1-why-top-tax-rate-could-be-over-80

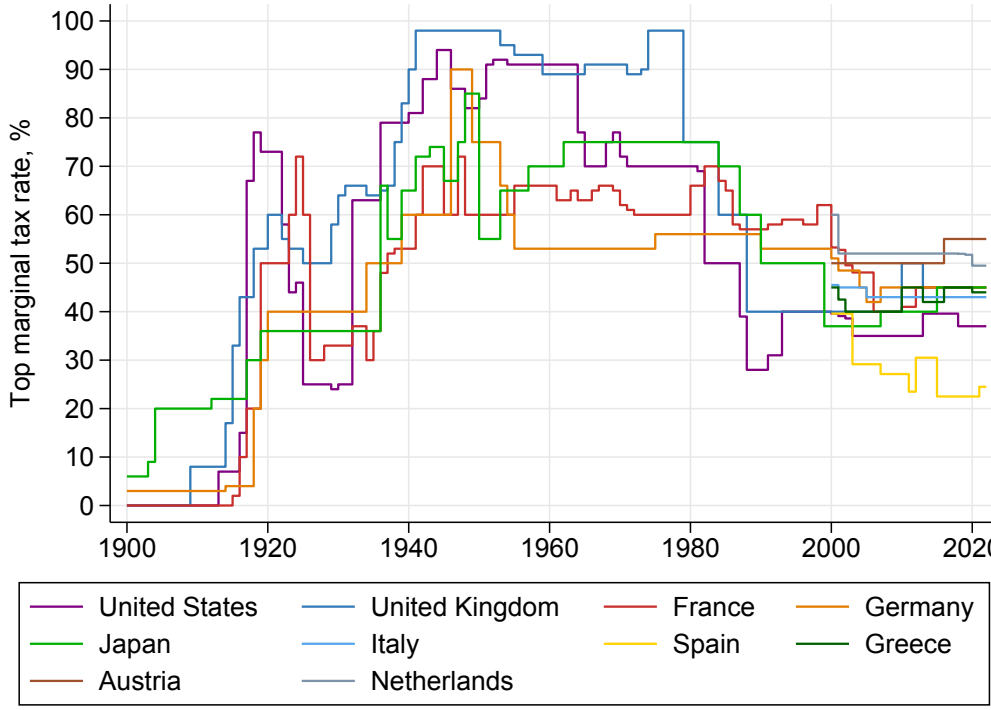

Fig. 10.3 Top Marginal Tax Rates over Time.
Source: Data covering the period before 2000 are from Piketty (2014) and Chancel et al. (2017). Post-2000 data are taken from the OECD Tax Database: dataset Table I.7.

What have been the economic impacts of the falling progressivity of the tax system? Lower progressivity has certainly been a major contributor to rising inequality trends, especially by boosting top-income shares (Roine et al. 2009; Jaumotte and Osorio Buitron 2020). Indeed, the tax reforms implemented in Western countries during the 1980s and early 1990s have particularly fattened income shares for the richest 1%, with top marginal tax-rate cuts accounting for a large part of the impact (Rubolino and Waldenström 2020).

One could argue that increasing levels of inequality are not a problem because, by spurring growth, they trickle down to the whole income distribution. However, burgeoning evidence shows unequivocally that this is not the case. Hope and Limberg (2022) find that tax cuts do not trigger higher levels of economic activity that percolate to the poor and middle classes. Instead, tax cuts lead to higher income growth for the rich. Shifting the focus from households to firms does not alter the general conclusion. With a meta-analysis of the existing literature, Gechert and Heimberger (2022) show that corporate-tax cuts also do not boost economic growth. On the opposite side, recent studies find that lower levels of inequality are associated with longer growth spells and that redistribution does not harm growth (Dabla-Norris et al. 2015; Berg et al. 2018). Moreover, lower inequality is also associated with higher wellbeing and

improved health conditions (Pickett and Wilkinson 2010). Therefore, the evidence seems to point more towards 'trickle-up' mechanisms (Palagi et al. 2023), with income growth at the bottom of the distribution benefiting also richer strands of society.

If lowering top tax rates does not spur growth (while increasing inequality), it certainly increases the risk of mounting public deficits due to the introduction of flat taxes. One emblematic episode highlighting the public financial risks generated by a flattening of the tax system is the steep rise in the cost of government debt that followed the announcement by Liz Truss's government in the UK of a massive tax cut, including a reduction of the top income-tax rate (see, for example, the analysis by the Institute for Fiscal Studies, Adam et al. 2002). Indeed, even major institutions such as the International Monetary Fund have recently advocated for policies restoring the degree of progressivity, by taxing the rich, as a way to increase revenues in countries with large debt stocks (IMF 2020). Such policy guidelines align with the previously mentioned theoretical work indicating that relatively high top-tax rates have a large revenue potential (Trabandt and Uhlig 2011; Diamond and Saez 2011; Piketty et al. 2014).

The evidence presented in this section clearly shows that recent decades have been characterised by a sequence of policies decreasing tax progressivity. Such policies have exacerbated inequality without spurring growth or employment. Moreover, lower progressivity has implied significant losses in terms of tax revenues for government spending, thus reinforcing adverse impacts on disparities, possibly defunding pre-distribution policies (for example, health and education). In the next section we will analyse some major policy proposals that could allow the restoration of higher levels of tax progressivity.

10.3 Turning the Tide: Policy Tools to Increase Tax Progressivity

In this section we will discuss some main proposals advanced nowadays to restore the progressivity of the tax system. We will first focus on the personal and household dimension by surveying the state of the art about wealth taxation (Section 10.3.1) and capital gains taxation (Section 10.3.2). We will then consider corporate taxation (Section 10.3.3).

10.3.1 Wealth Tax

There is a blossoming research line on wealth taxation that tries to assess its impact and account for the challenges in its effective implementation. A wealth tax mainly levied on the richest part of the wealth distribution (for example, the top 5%) could increase the progressivity of the overall tax system (see, for example, Guzzardi et al. (2022) for a simulation based on the Italian case). However, several key arguments against a wealth tax have already emerged.

One major concern is the issue of tax evasion. Wealth is, indeed, a mobile asset; even in the case of real estate, it can be relatively easy to sell and move investments to new locations. Individuals are able to sell their assets in a country with a wealth tax and move them out to avoid taxation. One potential solution to this problem would be to apply wealth taxes according to a person's residence, rather than the location of his or her wealth. Even in this case, wealthy individuals can choose to relocate and change their residence. This, in turn, may lead to a loss in total wealth for countries that introduce a wealth tax compared to neighbouring countries which do not tax assets. This scenario has been highlighted in a recent article from the *Guardian* that sheds light on the responses of Norwegian billionaires to a recent increase in the wealth tax (Neate 2023). Many billionaires, indeed, left the country to avoid the wealth tax.[2] However, at the time of writing, official data regarding the impact of these relocations on the total revenue generated by the Norwegian wealth tax are not yet accessible. On this topic, although there is a lack of comprehensive evidence taking into account the whole population and a large number of countries, the available empirical research shows that massive relocations of individuals between countries are rare (Kleven et al. 2020). In the case of France, the switch from the *Impôt de solidarité sur la fortune* (ISF) to the *Impôt sur la fortune immobilière* (IFI) had a negligible impact on the relocation of individuals abroad, although it affected the distribution of corporate dividends (Bach et al. 2021).[3] In any case, to minimize the risk of tax elusion, an EU-wide wealth tax common to all countries would be highly desirable, as proposed by Piketty (2021)[4] and Landais et al. (2020), as it would considerably discourage any potential relocation of assets or residence. Also, it would facilitate the introduction of common anti-avoidance rules, such as exit taxes.

Wealth taxes may also be avoided via portfolio adjustments through which individuals may reallocate their wealth towards assets that are not subject to taxation (see Duran-Cabré et al. 2019; Bastani and Waldenström 2020; Advani and Tarrant 2021; Saez and Zucman 2022b). Such an issue, however, is particularly relevant only when the legislation on wealth tax allows for many tax-exempt assets and different tax rates. This is what has happened in Spain, where Duran-Cabré et al. (2019) find that higher tax rates have induced individuals to make significant shifts in their portfolios to reduce the taxable wealth without affecting savings and minimally affecting total net wealth. As suggested by Saez and Zucman (2019a), the solution to this issue is relatively straightforward: the tax base needs to include all net wealth, thus ruling out any opportunity for portfolio adjustments to enable tax avoidance. This implies that a wealth tax levied on total net wealth is preferable to fragmented property taxes. Nevertheless, evasion may still occur if wealth has to be self-reported as is the case in Switzerland, where 'half of the apparent

2 However, some experts argue that the billionaires' relocations could be attributed instead to a response to modifications in the fiscal treatment of capital gains taxes (Advani et al. 2023).

3 Individuals can relocate their assets within the same country; in Switzerland, tax payers tend to move from cantons with higher wealth taxes to those with lower marginal rates (Brülhart et al. 2022).

4 On the need for a wealth tax to fight climate change, see also Piketty (2022).

wealth accumulation following the tax cut' is explained by 'self-reporting of previously hidden assets' (Brülhart et al. 2022: p. 36). Reliance on third-party valuation, therefore, is crucial to ensure accurate reporting, improve the accuracy of net wealth assessments, and effectively implement wealth taxes, as extensively suggested by the OECD Tax Policy Studies (OECD 2018) and by several scholars (for a review, see Advani and Tarrant 2021).

The final problem concerns the presence of liquidity constraints that some individuals may face with a wealth tax. This is particularly relevant if non-income generating assets are part of the wealth that is taxed. However, this issue can be solved by allowing for deferred tax payments as suggested by OECD (2018). This would ensure that people with unexpected liquidity constraints could postpone their tax payment. Nevertheless, taxing wealth could also induce a more productive use of assets (Guvenen et al. 2023), as individuals would have a greater incentive to use their wealth to generate income to cover their tax obligations (or else to sell it). This would lead to a reallocation of wealth toward more productive activities, possibly increasing economic growth over time.

Having discussed the possible weaknesses related to the introduction of a wealth tax, we can quickly estimate the potential tax revenues stemming from such a plan in the European Union. In order to obtain estimates on a comprehensive wealth tax, we start from total private net wealth, including tax-exempt assets.[5] Using estimates of wealth distribution for the European Union from the World Inequality Database (WID.world; Bajard et al. 2021), we can make a first assessment of different types of wealth tax. For example, levying a 1% tax rate on the top 1%—who own at least €1.5 million in 2021 and hold 25% of total EU personal wealth—would generate approximately 0.6% of EU GDP each year (assuming a 15% evasion rate). In a more progressive scenario, wealth-tax revenues might increase dramatically: for example, a 2% marginal rate for the top 0.1% and an additional 3% marginal rate for the 300 billionaires resident in the EU (Forbes 2022 list) could generate an annual revenue of 1% of EU GDP (see the estimates provided by Landais et al. 2020; Kapeller et al. 2021; Krenek and Schratzenstaller 2022). How the tax revenues from wealth would be employed for alternative scopes and shared across EU states would be a political choice.

Overall, we believe that the different issues analysed in this section should not be viewed as a motivation to dismiss the introduction of an EU-level wealth tax, as there are effective ways to solve them. Therefore, an EU-level progressive wealth tax could be an effective solution for regaining the lost tax progressivity, while raising significant resources which could be used to tackle societal challenges such as climate change (see Section 10.4). Many European countries have already introduced the wealth tax into their fiscal system: Austria, Denmark, France, Finland, Norway, and

5 Indeed, a re-assessment of which assets should be subject to the tax (ideally all) would be useful when practically designing a wealth tax. One key mistake which was made on the eve of the introduction of the wealth tax in France in 1981 was not to have a comprehensive tax base and to allow for various exemptions (Verbit 1991).

Switzerland (Sandford 1988; OECD 2018). Moreover, a wealth tax on the richest 1% of the population would be backed by the majority of the population, as survey evidence shows political support for a wealth tax on millionaires (Fabre et al. 2023).

10.3.2 Capital Gains Tax

One of the main reasons for the increase in inequalities and for the regressivity of tax systems for the top income shares discussed in Section 10.2 stems from the relevant role of financial income in the earnings of the most affluent people. A well-tailored capital gains tax is an effective option for increasing the fiscal burden for the richest individuals in the income distribution, partially reversing the loss of progressivity of the tax system. However, despite such potential benefits, a reform of capital gains taxation is not sufficiently debated in the European Union.

How does a capital gains tax work? The tax is levied on the profits obtained from the sale of various assets, including stocks, real estate, business shares, artworks, etc. The tax is calculated by considering the difference between the purchase ('basis') price and the sale price of the asset. For instance, if a person buys a stock for €1,000 and sells it for €2,500, the resulting capital gain of €1,500 will be taxed. In principle, this form of taxation should not introduce biases in reporting, and it should be impossible to evade, as it would be triggered every time assets are transferred.

There are two main problems related to capital gains taxation in Europe. The first stems from the significant disparity in tax rates across EU countries. For instance, in Germany the capital gains tax is 0% for real estate, while a flat tax of 26.3% is levied on other types of property. In Spain, the capital gains tax is progressive, but the top marginal rate is 26%, well below the top one for labour income. In Italy, the flat capital gains tax is set at 26% (with a lower rate of 12.5% for certain assets). In France, it is 36.2%, but the rate shrinks with the possession time of the underlying asset. The Netherlands has a 0% capital gains tax on all types of assets. More broadly, the average rate of capital gains tax in 123 countries is 18% (Christensen et al. 2023). There is, then, an urgent need for proposals to align capital gains taxation with the one on labour, increasing the former to restore the progressivity of the tax system. As capital gains are primarily concentrated among the wealthiest segments of the population (Advani and Summers 2020), higher tax rates would have the most significant impact on the richest individuals, thereby reducing inequality.

The second problem arises when individuals are allowed to postpone their capital gains tax payments indefinitely by retaining the asset until their death and then transferring it as an inheritance or gift (Nanda and Parkes 2019). Many European countries—Austria, Estonia, Germany, Ireland, Italy, Luxembourg and Sweden (OECD 2021a)—adopt this kind of 'carry-over' rule, which transfers assets' basis value to inheritors. Especially in the case of the ultra-wealthy, such a rule can considerably reduce the potential tax revenues: subsequent generations can defer their capital gains

indefinitely and, thus, avoid payment of the tax. The situation is even worse for the European countries where the law provides for a 'step-up in basis'—France, Hungary, Latvia, Lithuania, Portugal, Slovenia, and Spain (OECD 2021a)—which resets an asset's basis value to the level at the time of the death of the owner, thus drying up the possible revenue streams of the capital gains tax.[6] Uniform rules across EU countries are also required to fix the issue of indefinite postponing of capital gains realisation. A standardized EU rule that imposes the payment of capital gains taxes at the time of the owner's death would not only deter indefinite deferment and disincentivise asset- and individual-relocation to evade taxation, but it would also generate significant tax revenues. Such a taxation on unrealised capital gains would be particularly useful for increasing the effective tax rate paid by the very wealthy, who use their stock of wealth as collateral to finance their spending by borrowing (Eisinger et al. 2021).

How much revenue could a tax on unrealised capital gains generate? In the USA, a study by Oxfam (Christensen et al. 2023) shows that the potential revenues from a 20% one-off tax on unrealised capital gains for the five richest individuals in the period 2017–2022 would raise approximately $51bn. A similar exercise was conducted by Saez et al. (2021), who estimated that a one-time tax of approximately 40% on the accumulated stocks of unrealised capital gains of around a thousand USA billionaires would raise $1000bn. Such a tax could complement increased rates on realised capital gains, as proposed by Saez and Zucman (2021).

We performed similar calculations for the European Union. According to the *Forbes* (2022) list, there are about three hundred billionaires in the EU in 2022, a substantially lower number than in the USA. In line with the results of Saez et al. (2021), we conservatively assume that half of the wealth of EU is made of unrealised capital gains,[7] estimating €792bn of taxable wealth. Applying a tax rate of 26% as commonly done for realised capital gains in many countries, the total tax revenues would amount to €205bn. Moreover, with a higher tax rate of 40% aligned with those with such income, tax revenues could grow up to €316bn.

In order to implement such a proposal, one could introduce a permanent tax on unrealised capital gains over a five-year period (in line with Saez et al. 2021) for the richest individuals above a certain wealth threshold, possibly the top 1%. In this way one could wipe out the incentive to indefinitely postpone capital gains realisation and ensure a more stable source of revenue for the EU governments. Additionally, since capital gains would be considered realised every five years, any additional gains accrued in the following period would only be taxed on the incremental value, thus avoiding double taxation.[8]

6 A third category of countries, including Denmark and Finland, implements both a 'carry-over' rule or a 'step-up in basis' depending on the nature of assets.

7 Saez et al. (2021) find that, in the USA, the share of unrealised capital gains increases with wealth. We assume a constant share.

8 Double taxation has often been raised as a potential issue in the discussion of taxing capital gains and dividends at the same rates as other income sources. Notice, however, that double taxation is not

Based on such assumptions, we perform a basic simulation exercise using WID.world data (Bajard et al. 2021), focusing on the wealthiest 1% in the European Union, who own a total wealth of €16,600bn. We conservatively assume an average real wealth growth rate of 9.4%, half of that observed over the past 5 years. Moreover, we consider that only half of this growth is due to unrealised gains, obtaining a real appreciation of wealth equal to 4.7%. We find that €780bn of unrealised capital gains could be subject to the new tax, obtaining extra revenues of approximately €312bn, which would imply a yearly average of €62bn. Note that such a tax would amount to an annual average of merely 0.3% of the entire wealth of the top 1%.

The proposed capital gains tax should not be perceived as a radical fiscal policy. As the capital gains tax already exists in many EU countries, it only needs to be aligned with the marginal tax rates on labour income for those belonging to the top 1% of the wealth distribution. Moreover, the proposal is in tune with the Biden administration's plan to implement an annual tax on unrealised capital gains for the top 0.01% in the USA wealth distribution. The new capital gains tax could effectively increase revenues while reducing wealth inequality by ensuring that the ultra-wealthy pay their fair share of taxes.

10.3.3 Corporate Tax

Corporate taxation is a field of intervention that has recently regained attention. In October 2021 more than 130 countries signed an agreement to implement a 15% minimum tax on multinational profits (OECD 2021b). Although this is a significant first step, the proposal has raised several criticisms as it entails a low tax rate (Saez and Zucman 2022a), one far below effective rates paid by the majority of households in high-income countries (Bozio et al. 2018; Saez and Zucman 2019b; Guzzardi et al. 2023; Bruil et al. 2022). Moreover, low- and middle-income countries (LMICs) have criticized the measure as it will result in an inequitable transfer of revenues to high-income countries in which multinationals' headquarters are based (Chancel et al. 2023).

Despite such criticisms, the European Union would benefit from this measure. Indeed, many studies collected by the EU-Tax Observatory have estimated significant revenue losses at the EU level due to profit shifting. More specifically, profit shifting has cost the European Union yearly tax-revenue losses ranging from a minimum of €15bn (Janský and Palanský 2019) to a maximum of €40bn (Tørsløv et al. 2023), while Cobham and Janský (2018), Garcia-Bernardo and Janský (2022), and Álvarez-Martínez et al. (2022) estimate a total revenue loss of approximately €35bn per annum.

A minimum effective corporate tax is advantageous from at least two perspectives. First, it would promote fair competition. Currently, lower tax rates for multinational

uncommon in tax systems. For example, people are subject to VAT taxes on their consumption after having paid income taxes (Nanda and Parkes 2019).

enterprises (MNEs) compared to local firms create an unjust advantage for larger corporations. Second, implementing a global minimum-tax-rate rule would enhance income redistribution and progressivity, as corporate tax is a tax on corporate profits, a highly concentrated source of income and de facto a minimum tax on the affluent. By implementing this policy, governments can ensure that MNEs and wealthy individuals pay their fair share of taxes, promoting a more equitable distribution of income.

Research by the EU-Tax Observatory (Barake et al. 2021) shows that the introduction of a 15% minimum tax in the EU could generate additional revenues of €90bn (in 2022 euros); at 21%, it could provide €179bn; at 25%—the rate advocated by the Independent Commission for the Reform of International Corporate Taxation (ICRICT)—€255bn. The revenue potential is, therefore, significant. The EU Council has agreed to adopt the 15% global minimum effective tax rate in the European Union and the Directive that implements it will become effective from January 2024. Decisions on tax matters require unanimity in the EU council, giving countries that have historically attracted significant profits by offering MNEs low effective tax rates (for example, Ireland, Hungary, Poland, and Netherlands) a power to veto decisions. Moving to a higher rate could, therefore, be challenging, but it may occur if other countries (for example, in primis, the United States) increase their minimum tax rate above 15%, as this could induce EU members to follow to avoid to lose tax revenues.

Several proposals have been put forth that complement the 15% minimum tax on multinational profits. As corporate value is concentrated and boosted by market power, especially in high-tech sectors, Saez and Zucman (2022a) propose the institution of a 0.2% tax on corporations' stock shares for all publicly listed companies and large private companies headquartered in G20 countries. This measure would both have a high revenue potential, as it could raise 0.2% of world GDP each year, and be progressive, as stock ownership at present is highly unequally distributed. The authors also underline that liquidity would not be an issue as the tax could be paid in kind by issuing new stock.

A further corporate tax measure is to tax excess profits (Chancel et al. 2023). The high inflation, particularly as driven by energy prices, is going hand in hand with larger profits (see, for example, the evidence provided by the European Central Bank, Acre et al. 2023), while households especially at the bottom of national income distributions tend to be severely affected by increases in prices (Edelstein and Kilian 2009; Bruegel analysis by Claeys and Guetta-Jeanrenaud 2022). All these factors help to justify a tax on excess profits. Of course, the threat of profit shifting should be kept in mind while designing such a proposal (Hebous et al. 2022), which requires, as usual, harmonization among countries. In recent years, many countries have implemented windfall profit taxes, either independently, as in Italy or Spain, or in a coordinated manner within the EU. Indeed, in 2022, the Council of the European Union reached a consensus to apply an EU-wide windfall profit tax on fossil-fuel companies. The purpose of this tax is to generate funds to support households and businesses grappling with high-energy prices. Windfall profits

are defined as profits surpassing 120% of the reference period, which is determined as the average profit from 2018–2021. These excess profits are subject to a minimum tax rate of 33%. Considering that windfall profits have been observed in sectors other than energy, such as pharmaceuticals, food, banking, and military, there is a great potential to expand the excess profit tax to such relevant industries on a permanent basis.

10.4 Tax Progressivity for a Just, Green Transition

Given the increasing level of inequality and the regressivity of the tax system in many countries (Section 10.2), increasing tax progressivity should be an objective for a well-functioning society. A more progressive tax system could also provide the European Union with relevant resources to tackle societal challenges (as also discussed in the 'Manifesto for the Democratization of Europe', see Piketty 2018). The revenue potential of introducing EU taxes on wealth and unrealised capital gains, as well as to raise the minimum corporate tax rate to 25% would amount to $472bn corresponding to 2.9% of EU GDP (see Table 10.1).

Table 10.1 Yearly Tax Revenue Estimates

	in billion €	**in % of 2022 EU GDP**
Wealth tax	155	1%
Capital gains tax	62	0.4%
Corporate tax (15%–25%)	90–255	0.5–1.5%
Totals (yearly)	307–472	1.9–2.9%

Note: Tax revenues are reported if additional to the current system. See Section 10.3 for details on the different measures. Recall that, although the unrealised capital gains tax is levied over a period of 5 years, we here report the corresponding yearly value (see Section 10.3.2). Also, note that we do not report additional revenues that could be raised through a comprehensive tax on windfall profits due to the lack of estimates (see Section 10.3.3).
Source: Authors' estimations for the wealth tax and capital gains tax are based on WID.world data; corporate-tax estimates are based on the EU Tax Observatory data collection https://www.taxobservatory.eu/repository/the-scale-of-corporate-tax-avoidance/

Although these are quick estimates and the actual implementation of such policies would require a careful thought on the different limitations, our analysis shows that there is huge potential of collecting additional resources to tackle urgent societal challenges. Once a political consensus is achieved, the best design of taxes to increase the progressivity becomes a technical matter. And such a consensus could be supported by large parts of the population who are in favour of a wealth tax on millionaires (and of using the proceeds to finance low-income countries and climate change policies, Fabre et al. 2023).

The most pressing societal challenge faced by the European Union is climate change, which calls for both mitigation policies to cut GHG emissions and adaptation strategies to protect EU citizens from the impact of global warming. Let us first consider the cost of mitigation policies, as well as their potential impact on inequality. With the 'Fit for 55' package, the European Union has committed to the ambitious goal of reducing EU emissions by at least 55% by 2030. Although decarbonization and the green transition entail new economic opportunities, they also come with costs. The IPCC's *Sixth Assessment Report* (2023) shows, indeed, a large gap in the average annual mitigation investment needs: the actual average flows need to double to reach the minimum levels required for mitigation policies, with the gap in Europe amounting to almost €230bn yearly at minimum.[9] Moreover, the impact of mitigation policies on inequality is asymmetric (Markkanen and Anger-Kraavi 2019; Taconet et al. 2020). Carbon taxes are indeed typically regressive, hitting more the poorest income classes, possibly triggering social protests as in the case of French *Gillets Jaunes*.

Even if Europe meets GHG emissions-reduction targets, the global temperature will increase by at least 1.5 degrees C, further strengthening the already sizeable impacts of climate change on production and inequality (Burke et al. 2015; Coronese et al. 2019; Diffenbaugh and Burke 2019; Palagi et al. 2022). This is why adaptation measures are urgently needed. In Europe, estimates of adaptation investment needs range between €35 and €200bn per year (see European Environment Agency 2023). Such a range of investment is extremely wide, as estimates depend both on the extent of implemented mitigation strategies and on the large uncertainty of climate impacts on our economies.[10] The cost of climate impacts are unevenly distributed across the income distribution as more affluent individuals have more resources to shield themselves from extreme natural events. Moreover, potential inequality issues could arise also between EU countries given that the Mediterranean region is a particularly fragile area in terms of expected damages from extreme climate events (Coronese et al. 2019; Palagi et al. 2022).

Our proposed reforms to increase the progressivity of the EU tax system could provide the required resources to finance both mitigation and adaptation policies, while reducing inequality. According to our estimations in Section 10.3.1, the EU wealth tax could provide resources to fill most of the EU mitigation financing gap. The rest of resources could be provided by the unrealised capital gains tax and the 25% EU corporate tax which could finance also EU adaptation needs. Finally, the residual revenues could be channelled to middle- and low-income countries via the loss and damage fund created during the COP27 in Sharm el-Sheikh.[11]

9 For further details, see Figure 4.6 in the IPCC's synthesis report (2023).

10 For similar estimates referring to high-income countries see Stern and Stiglitz (2023). They find that adaptation and resilience spending must increase from $52bn in 2019 to a target of $327bn in 2030 in order to be consistent with a pathway to net-zero emissions by 2050.

11 Chancel et al. (2023) show that a 1.5% global wealth tax on individuals with net wealth over 100 million would be sufficient to cover the estimated adaptation funding needs of middle- and low-income countries.

To conclude, as climate change and inequality are two self-reinforcing phenomena, with climate change disproportionately affecting the poor (Diffenbaugh and Burke 2019; Palagi et al. 2022), and the global richest being responsible for the bulk of emissions (Chancel 2022), the introduction of a progressive tax system appears a timely and necessary action on the EU climate-policy agenda.

10.5 Conclusions

In this chapter, we have provided evidence on the evolution and distribution of the fiscal burden in advanced countries focusing on the European Union. The evidence shows that the degree of progressivity of tax systems has sunk so much in recent decades that the richest income classes are paying lower effective tax rates than bottom- and middle-income groups. This lost progressivity is enlarging disparities with no discernible effect on growth or employment.

We have then discussed how to restore some degree of the lost progressivity by passing an EU-wide tax reform encompassing a wealth tax levied on the richest 1% of the population, a tax on unrealised capital gains, and a substantial increase of the minimum tax on corporate profits. Our first estimates show that the revenues generated by such fiscal intervention are substantial. More specifically, an EU wealth tax could generate resources amounting to 1% of EU GDP. A tax on unrealised capital gains over the past 5 years would allow the EU to collect almost 2% of its GDP (0.4% yearly). Finally, an EU-level minimum corporate tax ranging between 15% and 25% could generate additional revenues corresponding to 0.5% and 1.5% of EU GDP.

Such a fresh flow of resources could be employed to finance both the mitigation and adaptation policies required to tackle the climate emergency. In this way, our package of fiscal interventions would allow EU countries to jointly reduce inequality, increase the fairness of their tax system, cut greenhouse-gas emissions, and dampen the social impact of extreme climate events. The proposed tax reform could then contribute to putting EU economies on a sustainable and inclusive pathway.

This work is just the first step in designing a fairer and climate-friendly tax system for the European Union. A complete assessment of the impact and revenue potential of the fiscal policy tools considered here require additional work. First, an extensive sensitivity analysis must be carried out on the estimated revenues, by varying the underlying assumptions. Second, additional analyses must be performed to assess the possible capital outflow triggered by EU-level fiscal policies. Nevertheless, given the regressivity of the current EU fiscal systems, our general conclusions robustly hold: there is ample space to impose higher taxes for those belonging to the top 1% of the EU wealth distribution.

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