

Flat tax: European experiences and Italian proposals

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Abstract

The paper discusses the flat tax, intended as a potential comprehensive reform of personal income tax. After a presentation of the broad characteristics of the flat tax model, we extensively describe the applications of this model that have taken place so far in some countries and its impact on financial and economic indicators. The last part of the paper focuses on the Italian case, assessing the possible distributional effects of the application on Italian households' incomes of some recently presented flat tax reform proposals.

Keywords: flat rate tax, distributive effect, tax allowance, microsimulation, Italy.

Jel codes: H2, H22, H24.

1. Introduction

In the four decades following the Second World War all advanced economies applied very progressive income taxes with many brackets and high top marginal rates. This model is still prevalent, but since the 1980s there has been a clear trend towards the reduction in top rates and in the number of brackets, inspired by the choices originally made in the US and UK, and also by theoretical developments concerning the properties of an optimal income tax. A strong intellectual influence came from Milton Friedman (1962), who proposed the negative income tax, which is a particular case of flat tax, and by Hall and Rabushka (1985), suggesting the adoption of a flat tax on consumption. In the same period, the theory of optimal taxation seemed to suggest that a tax able to balance equity and efficiency aims is not very far from linearity (Mirrlees 1971).

No western country has gone so far as to adopt the flat tax, i.e. an income tax with a single rate, while many eastern European states have made the leap towards it after the collapse of the Soviet empire. Unique among the western states, Italy has been in recent years the scene of a heated discussion about the flat tax, both in the academic and in the political arena. That is why it is an interesting case under study. The transition of personal income tax towards the single rate was indeed the main point of the electoral programs of two parties, Forza Italia and the League, during the campaign leading up to the elections of 4 March 2018. After the vote, the League-FSM (Five Stars Movement) coalition proposed an "almost" flat tax with two rates very close to each other, 15% and 20%, in the main objectives of the new government "contract". The government then fell well before it could fulfill this promise, however taking a first step in that direction with the introduction of an optional 15% tax rate on the incomes of self-employed workers whose revenue does not exceed 65,000 euro.¹ If they opt for this alternative rate, their tax base would be

¹ If the revenue is lower than 65,000 euro, the self-employed can choose between the application of the ordinary brackets of the personal income tax, with increasing marginal tax rates, and the application of the single 15% rate (in this case one cannot benefit from deductions and tax credits).

determined in a synthetic way using coefficients that vary by type of activity. For the self-employed there is therefore an alternative: either apply the progressive personal income tax schedule to their income, or apply the 15% rate to αR , where R is revenue and α is the coefficient that allows to obtain the imputed value of the tax base. If the revenue exceeds 65,000 euro, then the progressive schedule must be applied to total income. This reform has therefore introduced a strong incentive not to cross the threshold of 65,000 euro of revenue.

In Italy, as early as 1994 the media tycoon Silvio Berlusconi, who had just decided to get into politics, promised a single 33% rate, also inspired by contemporary presidential campaigns in the US. A few years later, in the first "contract" with the Italians, signed in 2001 during a television broadcast, the leader of Forza Italia proposed two rates, 23% up to 100 million lire (corresponding to 51,646 euro) and 33% beyond this figure. In the same year, the left also made its proposal in this direction: two rates, around 30-33% for the first and 37-40% the second, associated with a universal transfer to obtain greater distributional effects. Despite the clear electoral victories of 2001 and 2008, the center-right governments failed to implement the flat tax. Only the base rate of 23% was introduced in a first reform module, keeping however a structure with five tax rates. The latest structural reform of income tax dates back to 2007, significantly distant from the flat tax model. After a decade of oblivion due also to the urgencies of the economic crisis, the flat tax has emerged again with force in the academic and political debate in the last 4-5 years. The reasons for this revival are several, many specific to the Italian situation. One of the most important is the general dissatisfaction towards the economic performance of the country, whose GDP growth rate has long been one of the lowest among advanced economies. Many commentators blame the high tax burden for this disappointing performance. A tax reduction, it is hoped, could also contain the power of an increasingly invasive bureaucracy. Stagnant real incomes make it more and more difficult for many households to maintain their standard of living, so they look at tax reductions as the only way to see their income rise or at least stay constant, given the absence of economic growth. The popular success of the flat tax is indeed also due to the idea that its adoption will be accompanied by a lower tax revenue. Many taxpayers are not very worried about the likely regressive effects of the shift towards a flat tax system. For them, it is more important to see a reduction in their tax burden, without much concern about the possible consequences on the government budget. There are also some scholars and politicians that envision the flat tax as a way to reduce, not only tax revenues, but also the other side of the budget, because after a heavy fall in revenue it would become very difficult to keep public expenditure at previous levels. The Italian debate on the flat tax is taking place mostly in newspapers and on economics websites. See, for example, the contributions of Bisin (2017), De Nicola (2017), Toso (2017), Visco (2017). A more comprehensive discussion of the limits of the current personal income tax, with the flat tax as a possible solution, is provided by Stevanato (2016) and Liberati (2018). At the moment of writing this paper (June 2020), the flat tax is still the most publicized topic of the program of the League which, although now in opposition, is still the party with the strongest popular support according to all polls.

We think that the debate that has developed in Italy around the flat tax may also be of interest for an international audience, because many European economies share with Italy some characteristics and problems that may lead to proposals like the flat tax reform; for example sluggish growth, that stimulates the search for new policy ideas, or the heavy perceived burden of bureaucracy and administrative procedures, against which some politicians and commentators ask for a drastic simplification and a reduction in the intrusive capacity of the state. The rise of populist forces can

produce demand for fiscal innovation, in directions that are not clear a priori: would a populist government favour a very progressive income tax, so as to soak the rich, or a flat tax, so as to reduce, through a fall in the general revenue, the burden of the State on the lives of ordinary citizens? In Italy the second option has been prevailing for at least two decades, and could also gain momentum in other contexts. In these months all world economies are facing the consequences of the Covid-19 crisis, and the new context could also have important consequences on the debate about the desirable level and progressivity of taxes: is it better to reduce the tax burden, to relieve the effects of the crisis, or to increase it for some taxpayers, so as to guarantee assistance to the unemployed? The flat tax can be viewed as an extreme form that the proposals of some parties could take in economic and political contexts similar to the Italian one. The aspects and effects of a linear income tax in Spain have been discussed by Salas et al (2003) and Duran Cabré (2003). Labeaga et al. (2008) examine the efficiency and equity effects on Spanish households of some radical reforms, including a basic income-flat tax.

In the first part of this article we discuss the general characteristics of a flat tax. We then describe the applications that this model has been having around the world, with particular emphasis on the Eastern European countries. Many of them have indeed adopted it over the past twenty-five years. Studying their experience provides the opportunity to answer some questions concerning in particular the effects of the transition to the flat tax on revenue, income distribution and tax evasion, bearing in mind the great differences between the socio-economic conditions of the countries of the former Soviet bloc and those of the West. We also consider the trend towards the reduction of the number of brackets and the level of the highest marginal rates that has involved the OECD area in recent decades. Finally, the fourth section describes and evaluates some flat tax proposals presented in Italy in recent times, simulating their likely distributional effects between income classes. The final section proposes some conclusions.

2. What is the flat tax

In its simplest version, the flat tax multiplies the entire tax base with a single tax rate:

$$1) T=tY$$

where T is the amount of the tax, t is the single tax rate and Y the tax base, which we assume to be some measure of taxpayer's income. This tax is proportional, but it can be easily made progressive with the introduction of a tax allowance, i.e. a reduction in income before the application of the rate, or of a tax credit, i.e. a reduction in the tax due. The flat tax proposals recently presented in Italy are progressive thanks to a tax allowance. The presence of a basic allowance makes the flat taxes adopted by most Eastern European countries progressive, not proportional. The equation that best describes the flat tax that is usually discussed is therefore:

$$2) T=t(Y-D)$$

where D is the tax allowance and $Y - D$ the taxable income. The tax allowance may depend on the characteristics of the taxpayer, for example on the number of family members. If income is less than the tax allowance, nothing is due. The amount of the allowance may be chosen so as to exempt the poverty area from paying the tax. For example, if $t = 20\%$ and $D = 8,000$ euro, then up to this figure the tax is zero, and for greater incomes the 20% rate applies to the difference between income Y and the tax allowance itself. The average tax rate (ATR) is 4% ($4000/10000$) on 10,000 euro, 16%

(6400/40000) on 40,000: it increases with income, as required by the progressivity criterion. In the example, the average rate is 0 up to D , then keeps rising and at very high levels of income tends to the marginal rate of 20%, never reaching it. The ATR (the ratio between the tax and total income) rises very quickly as soon as the exempt threshold is exceeded, then growing more slowly on medium-high incomes. The flat tax with allowance is therefore very progressive on medium-low incomes (where the marginal rate t is much higher than the average rate) and is not far from proportionality in the upper part of the distribution. In the example, in the passage from 10,000 to 20,000 euro the ATR rises from 4% to 12%, while between 40,000 and 50,000 it increases only from 16% to 16.8%.

The same curve of the ATR with respect to income can be obtained by using a tax credit instead of the tax allowance. In this case the flat tax formula would be:

$$3) T = tY - d$$

where d is the tax credit. The two formulas are equivalent when $d = tD$. In our example, $d = 0.2 * 8,000 = 1,600$. Taxing all income at 20% and then removing 1,600 euro from the tax obtained is completely equivalent to subtracting 8,000 euro from income and then applying a tax rate of 20% to the difference.

The idea of a personal income tax with a single rate is not recent. It was developed by M. Friedman in his book *Capitalism and Freedom* (1962), suggesting a negative income tax as a single instrument able to reach two objectives: collecting revenue and providing a minimum income level to all. At that time the proposal was revolutionary because personal income tax in the US had many brackets with very high top marginal tax rates. According to Friedman, high tax rates reduce individual effort and induce taxpayers to look for legal or illegal loopholes, for example by changing the nature of declared income towards less taxed categories. The main advantages of the proposal were found in the administrative simplicity of the scheme, compared to the complex net of existing benefits, and in the conservation of an incentive to produce income for the whole distribution of taxpayers.

According to Friedman, a single 23.5% tax rate would have maintained the same revenue as the personal income tax of the time. The only difference between the flat tax and the negative income tax scheme is that in the expression $T = t(Y - D)$, when $Y < D$ the tax becomes a transfer, i.e. $-t(Y - D)$, to which the taxpayer is entitled. The amount tD is a minimum income level guaranteed by the State. The negative income tax is the combination of two schemes: a flat rate tax and a universal subsidy, or basic income, given to everybody without any conditions. If the universal subsidy is set at $S = tD$, and the flat tax is $T = tY$, then the "net" tax is $T - S = tY - tD = t(Y - D)$. The first advocate of a basic income was a liberal thinker like Friedman. The same idea was also advanced many years later by the progressive economist A. B. Atkinson, who in 1995 published a book titled *Public Economics in Action*, with the subtitle *The basic income / flat tax proposal*, suggesting a radical reform of the tax-benefit system centered around a single-rate personal income tax coupled with a universal unconditional transfer. The basic difference between the proposals of these two economists lies in the level of the guaranteed income and therefore also in the tax rate needed to finance it: Atkinson indeed suggested a tax rate of 40%, corresponding to the top marginal rate of UK income tax at that time. However, the presence of a single rate was not a qualifying part of the Atkinson proposal. He just needed a high tax rate so as to finance a generous basic income, hence the suggestion to apply the top rate to all incomes. More recently, he has proposed a bracketed structure for income tax, with top rates reaching 65% for incomes greater than 200,000 pounds (Atkinson 2015).

During the 1970s, the end of the postwar expansion and the growing attention towards the effects of policy decisions on the behavior of economic agents stimulated a new debate on the role and consequences of very progressive personal income tax rates. J. Mirrlees (1971), starting the research field of optimal direct taxation in its modern utilitarian version, which considers both the equity and efficiency effects of an ideal tax, concluded, by means of numerical simulations, that the optimal tax schedule is close to linearity, but this result was subsequently questioned by other contributions that place more weight on specific aspects. In general, the optimality of the flat tax is a very special result, which derives from specific assumptions on key variables like the form of the distribution of pre-tax incomes and abilities, the elasticity of labor supply and its distribution for different taxpayers, and social aversion to inequality. One of the most important economic facts of the last few decades has been the increase in the level of income inequality in some advanced countries, particularly to the benefit of the top percentiles. This shift in income distribution should induce, *ceteris paribus*, an increase in the progressivity of income tax, with top marginal tax rates that could reach very high levels (Diamond and Saez 2011, Piketty et al 2014), while the flat tax proposals that we consider below go in opposite directions. Many flat tax supporters underscore its potential effects on greater simplicity and tax compliance and lower administrative costs, but it is not clear to what extent the complexity of personal income tax depends on the number of brackets instead of other elements, for example the composition of the tax base or the presence of special treatments for some categories of taxpayers (Keen et al 2008). On the other hand, the evidence about the high mobility of rich taxpayers could induce a country to reduce its highest tax rates to attract top earners. Some countries have actually introduced in the last few years some preferential treatments for foreigners that change residence. Since 2017, for example, rich individuals who move their tax residence to Italy may choose to pay on their incomes produced outside of Italy a “flat” tax of 100,000 euro per year, and a preferential treatment is also allowed for Italians who decide to return to their motherland after a period of work spent abroad.

Currently in many countries some types of income escape progressivity and are subject to proportional flat taxes. In Italy, for example, this is the case of all financial incomes and in the last few years of rents earned from dwellings. The presence of many special tax regimes induces taxpayers to arbitrage operations that produce distortions and inequities. A single rate could simplify things and generate a more level playing field. The same rate could be applied to the other main taxes on profits and value added. The choice of the tax base is also relevant from another perspective, i.e. the alternative between a consumption or an income tax base. In the US, the most famous flat tax proposal was presented in 1985 by R. Hall and A. Rabushka: a 19% tax rate (to keep the revenue constant) applied to total national consumption. The proposal is structured in two taxes with equal rates: a proportional business tax on the value added of firms, and a progressive personal income tax given by $T = 0.19 * (earnings - D)$, where D is an exemption dependent on family composition. The key aspect of this proposal, however, is not the single rate, but the consumption base, obtained through the exemption of investments. This proposal is far from the European debate, because in Europe Value Added Tax (VAT) already exists, and is also distant from the flat taxes of the East European countries, whose base is income. Unlike the European VAT it would be progressive on income thanks to the personal deduction. To take account of the growing inequality in income and consumption distribution, Hall has recently amended his proposal in the sense of adding at least one bracket, but keeping consumption as the base (Hall, 2010). Very close to the spirit of the Hall proposal is the dual income tax of the Nordic countries (Boadway 2004), which in fact can be considered as a flat tax with a progressive surcharge, and which is close to the concrete application of personal income tax in various countries, including Italy, where only some forms of income (typically wages and pensions) are subject to a progressive schedule, while others are taxed

by a proportional rate.

Which income groups would benefit from the shift of personal income tax to the single rate? A flat tax can be very progressive (Davies and Hoy 2002): given the constraint of equal revenue, the higher the tax rate, the wider the exempt area can be. A low tax rate increases inequality compared to a tax with many brackets and equal revenue. But a high tax rate can reduce inequality in after-tax incomes. The key point is: how many resources are we willing to give up in the transition to the single rate? The greater the reduction in revenue, the lower the tax rate can be, and the greater the likelihood that the middle class may gain in the process. The various flat tax proposals advanced for Italy, described in the final part of this paper, have in common a significant loss of revenue, in the order of a few tens of billions per year. To illustrate with an example the relationship between the choice of the tax rate, the revenue loss and the distributional impact of a flat tax, consider two hypothetical flat taxes for Italy:

- a) 25% tax rate and reduction in revenue of 50 billion compared to the current income tax.
- b) 35% tax rate and the same revenue as the current income tax.

In both cases, the tax base is family income and families in relative poverty are excluded from the tax with a deduction (we define relative poverty following the Eurostat criterion). The first hypothesis summarizes the proposals circulated in recent years in Italy, while the second maintains revenue constant. Simulating these two taxes on Italian data with a microsimulation model described in section 4, we obtain that in the first case low-income families would not benefit, since they already pay low income tax, the middle class would get tax relief of about 1,000-1,500 euro per year, while the top 5% of the income distribution would save about 12,000 euro on average per year. Therefore, if we want to significantly increase the disposable income of the middle class with a flat tax, we must be willing to lose a great deal of revenue. Conversely, the 35% rate keeps the revenue constant but the middle class would pay more than now, and all benefits would go to higher incomes. Thus we face a trade-off: if we are looking for a flat tax that also benefits the middle class, we have to give up a lot of revenue. But if the fiscal space is modest, the only taxpayers that would earn from the transition to the single tax rate would be the highest incomes. In Baldini and Rizzo (2019) we describe these results in more detail. To summarize, compared to today's Italian personal income tax, it is not possible to switch to a flat tax that simultaneously achieves these two objectives: equal revenue and significant advantages for low and medium income taxpayers. There is in fact another alternative: an extremely high single rate, at least 40%, coupled with an even larger exempt area. But this is a flat tax model that very few have in mind, not only in the current Italian debate.

3. The international expansion of the flat tax

Although the flat rate scheme associated to a broad tax allowance was the preferred income tax model for some of the most important early economists, such as A. Smith and J.S. Mill, with few exceptions it did not characterize the former historical cases of income tax between the end of the eighteenth and the first decades of the nineteenth century. Throughout the course of the nineteenth century, however, the rates were so low and the exempt area so large that the revenue was very modest and came from an extremely small fraction of the population. In the advanced economies, income tax becomes the main source of income, with very progressive tax rates, only from the first decades of the 20th century (Scheve and Stasavage 2016) . The 60s and 70s of the last century are characterized by the establishment of the more progressive formal structures of the

tax. In Italy, personal income tax was introduced in 1974 with 32 brackets and the highest marginal rate set at 72%. But it can be said that this income tax was born already out of date, because in those years a cultural and political turning point against excessive public intervention in the economy began to mature in the Anglo-Saxon countries, culminating in the electoral victories of R. Reagan in the US and M. Thatcher in the UK. These two countries in the 1980s drastically cut the highest marginal rates, an example followed by all the advanced economies in the following twenty years. However, this trend seems to have stopped since the early 2000s, and in particular after the onset of the 2008 crisis. Gerber et al. (2018) underline that in the advanced economies the last few years have seen a slight increase in the progressivity of income tax. The need for more resources to counteract the effects of the crisis and to curb the trend of increasing inequality have pushed some countries to rely more heavily on the progressivity of income tax. The tendency to reduce the number of brackets and the value of the higher marginal rates, especially in the 1980s and 1990s, has slowed down considerably in the most recent period. Compared to the extremes of 60 years ago, today in the OECD countries the number of brackets is lower and the top marginal rates have decreased, but none of these countries is planning to switch to the flat tax model, nor is there a significant debate on this, with the exception of Italy.

3.1 The experiences of flat tax

The flat tax has instead spread in recent decades in many economies with a lower level of development. Apart from some special cases such as Hong Kong since 1947 and Bolivia and Jamaica respectively in 1986 and 1987, it is especially since the 1990s that it has been adopted by many states, in particular in the former Soviet bloc (almost all these countries now adopt the flat tax) and in some developing economies (including Madagascar and Mongolia) or in very small countries (Belize, Andorra, Nauru, Grenada, Tuvalu and others). The introduction of the single tax rate has not always been a definitive choice over time. After having adopted it, some countries have indeed returned to a multi-bracket progressive system. In most cases, the reintroduction of a progressive direct taxation system has been part of a package of reforms designed to respond to the economic and financial crisis (Peichl 2014). The percentage of nations that have adopted a flat tax system (Fig. 1) was growing up to 2010 (about 18% of the total number of nations reviewed by the World Bank), after which some nations left this system and have not been replaced by new ones. Indeed, Serbia and Iceland returned to a progressive system in 2010, Ukraine in 2011, the Czech Republic, Slovakia and Montenegro in 2013, Albania in 2014 and Latvia in 2018. Interestingly, the share of nations adopting a flat income tax has been following a downward trend after the onset of the financial crisis of 2008. Two factors are likely to explain this retreat: the need to collect more resources to finance anticyclical and social policies, and the increase in the level of inequality in gross incomes that has taken place in many countries.

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Let us look more specifically at the reforms regarding some countries of the former Soviet bloc. After the switch to the flat tax in the three Baltic states during the '90s, with their adoption of not particularly low rates, in 2001 Russia decided to dramatically reform its personal income tax, setting the single rate at only 13%. The previous structure of the personal income tax had three rates: 12%, 20% and 30%. The rate of corporate income tax was instead increased from 30% to 35%. The tax on financial incomes was reduced from 15 to 13%, bringing it in line with that for labor income. The flat tax on personal income was made progressive thanks to a deduction, but this exemption decreases as the income increases up to a point where the taxpayer is no longer entitled to it and the tax therefore becomes purely proportional. Individuals with an income above 50,000 rubles were the

main beneficiaries of the reform (Duncan, 2014). In fact, before the reform the incomes between 50,000 and 150,000 rubles had to pay a marginal rate of 20%, and above this threshold the rate was 30%. The tax rate on dividends was increased from 15% to 30%, while the VAT rate was kept at 20%.

The Slovak Republic has represented an important case study. In 2004, the Slovak government implemented a general tax reform which unified the tax system, imposing a single rate of 19% for personal income tax, business income tax and VAT. The 2004 reform included a no tax area for taxpayers with an annual income of 80,832 Slovak crowns [equivalent to approximately 2,700 euros]. The reform also introduced a tax credit of 4,800 crowns [160 euros] per child and 80,832 crowns per dependent spouse. Before the reform, personal income tax was bracketed with 5 rates (10%, 20%, 28%, 35% and 38%). The single rate for corporate income tax was 25% in 2003. Dividends previously taxed at 15% were exempted, while interest income and capital gains were subject to the same 19% rate. VAT had two rates before the reform: 20% and 14%. In the wake of the financial crisis that has put public finances under strain, the Bratislava government in 2013 decided to back down after nine years, adding a second bracket with a 25% rate to income tax.

In January 2004 Ukraine emulated the Russian example with a 13% flat tax. The single rate switched then to 18%. The tax allowance was identical for all, and available only to those who have an income less than 1.4 times the subsistence income. Above this income the taxpayer was no longer entitled to any tax allowance and therefore the tax becomes proportional. The tax base has been enlarged to include within it also the interests previously exempted from taxation. Tax on corporate profits decreased from 30% to 25% and the rate for dividend taxation went from 30% to 13%. The VAT rate remained at 20%.

Georgia introduced a 12% flat tax in 2005, replacing a progressive tax with 4 brackets which were associated with a minimum rate of 12% and a maximum one of 20%. It then switched the single rate to 20%. No tax allowance was granted, so this was a purely proportional income tax. The corporate tax rate remained unchanged at 20%, while dividends, interests and capital gains remain taxed at 10%. The VAT rate went from 20% to 18%.

In Estonia, the adoption of the flat tax was part of a series of reforms started in the early 1990s. The single rate was initially set at 26%, roughly halfway between the highest (33%) and the lowest (16%) pre-reform marginal rates. The single rate was then reduced to 20% in 2009. Exempt incomes were significantly increased with the flat tax. In addition, the number of tax allowances and tax credits decreased, although the possibility of tax allowance for pensions and dependent children remained (Hadler, Moloi and Wallace, 2007). Corporate income tax, before at 35%, decreased in 1994 to 26%. In 2007 Estonia further decided to decrease the rate to 20%, in response to Russia's new 13% rate. There were no substantial changes in the VAT rate fixed at 10%.

Lithuania introduced the flat tax, with a rate equal to 33%, in 1994, equal to the highest marginal rate imposed before the reform. The progressive system before the reform included five brackets which were associated with rates from 10% to 33%. Exempted incomes were significantly increased. The corporate income tax rate was kept at 29% (decreased to 24% in 2000), even if profits not redistributed and particular forms of exemption for small businesses and foreign investments are taxed at 10%. The previous general excise duties on production activities have been transformed into a real VAT with a rate equal to 18%.

The single 25% rate in Latvia was introduced later, only in 1997. Before this reform Latvia had a regressive structure with two rates: a first marginal rate of 25% for lower incomes and a 10% rate for higher incomes. For this reason, the case of Latvia is particular because the introduction of the flat tax (with equal exempt incomes) benefited people with lower incomes. Tax allowances were introduced to guarantee progressivity. Corporate income taxation dropped to a rate for all companies at 25% (then reduced to 22 % in 2001), although dividends and interest rates remained exempt. The rate was then reduced to 15%. As in Estonia, there was no substantial change in the VAT equal to 18. Latvia abolished the flat tax in 2018 going back to progressivity by brackets.

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The global crisis that began in 2008 has prompted several countries to increase the tax on the most affluent segment of the population, that is, the one that can afford to pay more in difficult times. For example, as already mentioned, the Latvian government justified the abandonment of the flat tax from 2018 with the aims of introducing greater equity in the tax system and of finding resources to finance public spending. Outside Eastern Europe, Iceland adopted the flat tax in 2007 (rate 22.75%), but already in 2010 returned to progressivity with 2 brackets and very high rates: 37% and 46%. The main developing economies are also very far from the flat tax. In China, for example, the income tax has 7 brackets, with rates from 3% to 45%. In India there are 4 brackets with the highest rate at 30%, Brazil has 5 brackets with the highest marginal rate at 27.5%, South Korea 7 brackets up to 42%.

3.2 The effects of the introduction of a flat tax

Let us see what the effect of the introduction of the flat tax has been in the principal countries of the former Soviet bloc. As regard the Slovak Republic, according to Durajka (2005) the reform package was ambitious and in any case led to the creation of a more competitive and undistorted market environment. Brook and Leibfritz (2005) find that the reform has increased the level and efficiency of capital investment. Secondly, the combination of the tax reform with other social reforms has brought credible incentives for workers, and employment has increased, thanks also to a more flexible labor market. With respect to equity, the results do not seem so clear: both low and high-income people benefited, while middle class families worsened their situation. The adoption of the flat tax in Slovakia seems to have strengthened the progressiveness of the system, by increasing the weight and role of tax allowances and tax credits (World Bank, 2005). Research carried out by Sklenář and Burger (2006) did not show any significant change in the evasion rate in the Slovak Republic after the reform. Slovakia, having adopted a very low rate compared to those previously in force, obtains income tax revenue after the reform equal to 2.6% of GDP, while before it was equal to 3.3% of GDP. Corporate tax revenue also decreased from 2.8% of GDP to 2.4% of GDP. However, there is a compensatory increase in VAT revenue. (Keen, Kim and Varsano, 2008).

In Russia revenue from taxation on personal income increased from 2.4 per cent of GDP in 2000 to 2.9 per cent in 2001, and the revenue from corporate tax increased from 5.5 to 5.8 per cent. However, Chua (2003) estimated that in the absence of effects due to the positive economic cycle, tax revenue from personal income decreased by 0.2 percent of GDP. Gorodnichenko, Vazquez and Sabirianova (2009), using consumption data, associated a large and significant decrease in tax evasion in the Russian Federation after the introduction of the single rate, in particular the greatest

reduction in tax evasion was found for taxpayers who had the largest reduction in the rate after the reform. However, Ivanova, Keen and Klemm (2005) report some polls in Russia that suggest that taxpayers have not perceived the post-2001 reform as simpler. The analysis carried out by Ivanova, Keen and Klemm (2005) does not show any empirical evidence that the tax reform in Russia has had clear effects on the labor market; actually neither total income nor hours worked significantly changed after the reform. In the same work, the authors do not find significant evidence of increased compliance. Finally Duncan (2014), comparing the pre and post reform Gini Index, based on a representative sample of taxpayers, suggests that the impact on income distribution of the reform was minimal.

Ukraine, after the introduction of the flat tax, has seen a drop in income tax revenue from 5.1% of GDP to 3.8% of GDP. Corporate tax revenues also decreased from 5% to 4.7% of GDP. In Georgia personal income tax revenue decreased from 2.7% to 2.5% of GDP and corporate tax revenue increased from 1.6% to 1.9% of GDP and VAT also increased from 11.1 to 13.3 in GDP.

In Estonia, personal income tax and corporate tax revenue fell after the introduction of the flat tax. The former passed from 8.5% to 8.1% of GDP. The decrease in the tax rate on corporate income has also led to a loss of revenue from 4.8% to 3.5% of GDP. In Lithuania personal income tax revenue grew after the introduction of the single rate. The result was expected given that the rate was set at the highest level compared to those previously in force. In fact, it rose to 5.4% compared to the previous 5%. Corporate tax in relation to GDP has decreased from 5.3 to 2.5% of GDP. In Latvia revenue from personal income tax increased, given that the rate was set at the highest level compared to those previously in force. The revenue went from 5.4% to 5.6 % of GDP. The revenue from corporate tax increased from 2.0 % to 2.4% of GDP.²

To sum up, it is difficult to draw clear conclusions about the impact of the shift towards a single rate personal income tax. Besides the fact that the reforms were rarely introduced keeping the revenue constant, the single cases were too different to allow us to draw general conclusions, and too many economic factors changed in the same years, making it extremely risky to disentangle the effect of the transition to the flat tax. In some cases, however, some positive effects have been identified on tax evasion, labour supply and tax simplification.

3.3 Differences between countries with or without a flat tax

The countries that are currently adopting a flat tax can hardly provide a reference model for those of western Europe in addition because they are still at a very different stage of economic development, despite the progress made during the past 20 years. Table 2 compares some indicators - related to 2016 - of Eastern European countries with a flat tax regime and the main Western European economies. In the first group the GDP per capita ranges from a minimum of 2,186 in Ukraine to a maximum of 17,737 euro in Estonia. The latter value is lower than the lowest - that of Greece – among the countries of the second group. Such distant stages of economic development also produce a different demand for public spending in general, and social spending in particular. The incidence of public expenditure on GDP is in fact today on average 35% in European countries with flat tax, almost 12 percentage points lower than the average for Western European countries with progressive income tax. Social spending is also significantly higher in Western Europe. It is therefore logical that revenue also has a much lower incidence on GDP - on average by 10 percentage points - in eastern countries. A low-rate flat tax manages - together with other taxes -

² All the figures in this paragraph are taken from Keen, Kim and Varsano (2008).

to finance the social spending needs of these countries precisely because they are still limited. However, where public expenditure is high, the adoption of a flat tax at low rates such as those discussed here could make it impossible to finance current levels of public expenditure and impose significant cuts. Finally, the Eastern countries also tell us that the transition to the flat tax does not necessarily reduce the tax wedge on employees, given by the difference between the cost of labor paid by the firm and the net wage received by the worker. Italy, for example, according to OECD data for 2018, has one of the highest tax wedges in the world: for an employee without children, it reaches 47.7% of the cost of labor. But in Hungary, which has a 15% flat tax, the tax wedge is 46.2%, higher than that of Sweden (42.9%), which has a very progressive income tax.

INSERT HERE TABLE 2

The flat tax model therefore seems to have taken hold so far in a rather circumscribed area, characterized by economies that are very different from those of Western Europe. “The flat tax has commonly (almost universally) been adopted by new governments anxious to signal a fundamental regime shift, towards more market-oriented policies. In several cases, the signal appears to have been well-received. Where no such reputation needs to be acquired, the appeal of the flat tax is consequently less” (Keen et al. 2008). Also, from a political point of view, some of the countries that have adopted the flat tax are very young democratic systems, far from being able to represent a point of reference. The crisis of the last decade, as we have seen, has interrupted the expansion of the flat tax and given way in some cases to reconsideration. Predicting what will happen to the flat tax in the coming years is difficult, but some trends seem to lead in a direction that is not favourable to the prospects of the single-tax-rate model. European societies are all aging rapidly, and will do so even more if the temptation to close themselves to migratory flows prevails. Aging will entail a growing demand for resources to finance pensions and health care. In response to these dynamics, it is likely that governments will try to collect revenue where it is less painful to do so, that is, on medium-high incomes. Furthermore, if the economic growth phase continues in the eastern countries, the middle class will increase its ranks and become politically more influential, exerting greater pressure towards an increase in taxation on high incomes. Another ongoing trend that already discourages the transition to the flat tax in rich countries is the increase in inequality in the distribution of income and in the incidence of poverty within many countries. These redistributive concerns reflect the worsening conditions of low and middle-income families, who are struggling to cope with the impact of changes brought about by globalization and technological progress. Even in Eastern countries, attention to distributional issues seems to be increasing. For example, according to data from the World Values Survey, the share of Russian citizens who approve the sentence “incomes should be made more equal” has greatly increased during the last decade (from the period 2005-09 to 2010-14), while the percentage of those who agree with the idea that “we need greater differences in income as incentives for individual effort” has decreased.

4. Some recent flat tax proposals in Italy

In this section we discuss some flat tax proposals recently put forward in Italy. We focus in particular on two cases: the flat tax contained in the League's programme for the 2018 elections, which later became an “almost” flat tax with two rates in the League-FSM (Five Stars Movement) government contract, and the proposal presented by the Bruno Leoni Institute. Their description is followed by the quantification of the effects on income distribution and revenue.

4. 1 The Bruno Leoni Institute's proposal

The Bruno Leoni Institute (IBL) of Milan (www.brunoleoni.it) has formulated an ambitious project (Rossi 2018) that radically revises not only the income tax system, but also other taxes such as VAT and capital income tax. It also touches some basic pillars of the welfare state, in particular cash transfers. The tax base of personal income tax would shift from individual to family income and would be subject to the 25% rate. The same rate would apply to VAT (maintaining the current reduced rates of 4% and 22%) and to existing taxes on financial incomes and corporate profits. The tax base would be widened, including all income types that are now subject to proportional rates (mainly interest and rents). With an explicit reference to Friedman's negative tax model, the new income tax would still be progressive thanks to a tax allowance: if family income is lower than this threshold, the tax turns into a transfer that fills the difference between the threshold itself and family income. All poor people are thus guaranteed a minimum income level, differentiated by area of residence to account for the marked geographical variation in the cost of living: its yearly amount is set at 7,000 euro for a single person resident in the North, 6,000 euro in the Centre and 5,100 euro in the South. For families with more than one member, these figures are multiplied by an equivalence scale, given by the number of family members raised to the power 0.65 (the same scale currently used to select the beneficiaries of many benefits at the municipal level). There are also some tax allowances by type of income and for particular family types. All the other current tax allowances would be abolished

The guaranteed minimum income should replace all current welfare transfers (apart from pensions of course, depending on previous work experience and survivors' pensions), improving the ability of social spending to be targeted towards the real poor and reducing administrative costs.

To cover the budget loss, reforming welfare spending and increasing VAT are necessary but insufficient steps. Therefore, the proposal suggests a challenging spending review (about 30 billion euro per year) and the introduction of a health care contribution for the "wealthiest" families (with an estimated revenue of 18 billion euro per year). These families could avoid its payment if they decide to opt out of the public healthcare system, that would therefore cease to be a universal service open to all citizens. In the case that these measures are not enough to compensate for the revenue loss, the proposal suggests increasing university fees for students from wealthy families. The declared aim of the proposal, as in Friedman's model, is the redefinition of the relationship between State and citizens, towards a lower public intrusion in the functioning of markets. The welfare state would be targeted to families with low and medium incomes, while many rich households would look after themselves in the private insurance (and perhaps educational) market. The risk of giving rise to a dual system, a low quality public sector with scarce resources, and a private sector with high standards because it is financed by the wealthiest, is considerable.

This reform scheme has an important difference with respect to the negative tax model: formally, the structure of the IBL proposal can be summarized as follows:

- 4) $T=0.25(Y-D)$ if $Y \geq D$
- 5) $T=-(Y-D)$ if $Y < D$,

where Y is income and D is the allowance. The negative income tax scheme, on the other hand, is $T=0.25(Y-D)$ for any value of D . Below D , in the IBL proposal the marginal effective tax rate for those

receiving the minimum income would be much higher (100%) than in the case of the negative income tax case (25%). In fact, the transfer is expected to be reduced by 1 euro for every extra euro earned on the market, at least until the taxpayer escapes from poverty. In the negative tax model, on the other hand, if a poor person starts working, his net income increases, so the marginal rate is less than 100%. The transfer for the poor, for any level of income below D , is higher in the IBL proposal, but the price of this greater generosity is a stronger disincentive to produce income. Let us also see with an example the difference between the negative tax and an income tax with a guaranteed minimum income. Assume that an individual has income of 300, and that there is a tax rate of 25% and an allowance (D) of 1,000. Further, a negative tax is allowed, i.e. when the tax allowance is higher than income the taxpayer pays a negative tax (receives a transfer) equal to income minus the deduction multiplied by the tax rate: $-700 \cdot 0.25 = -175$, then the transfer is equal to 175. In the case of minimum income, it is expected that below the level of 1,000 the taxpayer receives a transfer equal to the difference between 1,000 and his income, i.e. 700. If the income increases by 100, in the first case the negative tax becomes $-600 \cdot 0.25 = -150$, i.e. a transfer of 150. So if the income increases by 100 there is a decrease in the transfer of 25: we are faced with a 25% marginal rate. In the minimum income case the transfer goes from 700 to $1,000 - 400 = 600$: the transfer therefore decreases by 100 against an increase of income of 100, with a marginal rate of 100%. This raises the delicate issue of a possible poverty trap. Moreover, at the other extreme of income distribution, the additional contribution that the rich would have to pay for health care and universities is actually similar to an additional rate. Considering all its aspects, far from envisaging a single rate, the IBL scheme has in fact four marginal rates: 100% for those receiving the minimum income, 0% for those who are above the minimum income but not well-off enough to pay income tax (the exempt threshold of the proposal is higher than the minimum income), 25% for low-middle income taxpayers and 25% plus the cost of health care and university for medium-high incomes. If one exceeds the threshold above which you are considered "wealthy" by even a small amount, one has to pay in full for health care insurance and perhaps also for university. This is another sort of trap that does not induce people to remain in poverty, but to remain with an average income, extended, however, to the entire population.

Since the reform produces a revenue loss, there would be savings for many families. The middle class should gain little, because the rate of 25% is not particularly low. The rich would certainly gain, but they run the risk of paying substantially more than now for health care and perhaps university fees.

4.2 The League's proposal

During the campaign for the March 2018 elections, the flat tax was the main workhorse of the League's program. It is not easy to outline the precise contours of the proposal, which was very generically formulated. A draft law presented at the Senate in July 2015 provides some information. This text proposed moving to the single rate of 15% applied to a tax base given by the total income of the family, with progressivity guaranteed by a tax allowance that depends on the family composition and on total family income (see Tab. 6), which goes to 0 if family income is above 50,000 euro, meaning that over this limit the tax becomes proportional. This tax allowance would replace all current tax allowances and credits, with the exception of the tax credit for interest paid on mortgages on resident dwellings. There is a safeguard clause which allows taxpayers to calculate

the tax according to the current rules, if more advantageous. The reduction of income tax is considered necessary by the proponents to revitalize economic activity after the great crisis that started in 2008. It will also reduce evasion and simplify tax rules. As an extreme form of simplification, the League also proposed abolishing the withholding tax and to concentrate payment at a single annual point. This would be a dramatic step back with respect to a fundamental characteristic of modern tax systems, with unpredictable consequences. Capital income would be subject to the 15% rate.

After winning the general elections in March 2018, the League and the Five Stars Movement formed a government with a program detailed in a “contract” formally signed in May. As regards the income tax, this contract contained a novelty: the rates of the proposed new income tax became two, 15% and 20%. The contract kept speaking of a flat tax, but it would have been more correct to speak of an “almost” flat tax. The difference between one and two rates is not marginal, because the presence of at least two brackets gives the government much more room for manoeuvre: current Italian personal income tax has indeed 5 brackets, but it is actually not very far away from a two rate structure, given the significant gap between the two lower (23% and 27%) and the three higher rates (38%, 41%, 43%). The shift from the current 5-rates structure to a new income tax with only 2 rates is therefore not particularly challenging. After 5 years of government, with a 2-rate tax the ruling parties could have said that they were following the original program, and that they need more time to reach the final objective. The difficult part, the shift from 2 to only one rate, could be postponed to the future. But these are speculations, because the League-Five Star Movement government fell in August 2019, with the 5-rate Irpef (Imposta sul reddito delle persone fisiche) only marginally touched. We simulate the distributive impact of the scheme envisaged in the government contract because the flat tax is still an important component of the program of the League.

The contract did not specify from which threshold one would start paying the 20% rate, but statements by various members of the League have referred to the figure of 80 thousand euro. Unlike the proposal of the Bruno Leoni Institute, the League's proposal only concerns the main taxes, all of which with rates at 15%-20%, and not cash transfers. The drafters of the proposal are aware that it would produce a significant revenue loss. The main coverage consists in the hoped-for emergence of the evaded tax base, to which one could add the extra revenue from consumption taxes caused by increased demand, as a consequence of the greater disposable income. A new tax amnesty was also proposed, in order to increase revenue in the first two years of the reform. In subsequent years, the increase in revenue produced by the greater economic activity will take the place of tax amnesties in ensuring the balance of accounts. Table 3 summarizes the main characteristics of the two reform proposals considered in this paper.

INSERT HERE TABLE 3

4.3 The distributional impact of the flat tax proposals in Italy

Together with the “almost” flat tax with two very close tax rates, the other central point of the League-FSM government contract was the introduction of a generous minimum income scheme, actually introduced in March 2019 under the name of Citizenship income. The combination of an

anti-poverty transfer with a nearly flat tax is therefore very similar to the IBL proposal, which includes, as explained above, a flat tax and a minimum income scheme. In this section we focus on the distributive effects of the shift to the flat tax, without considering the introduction of a new cash transfer against poverty.

The analysis of the distributive impact of these two flat tax proposals is here performed with a static tax-benefit microsimulation model that simulates all the main taxes and transfers of the Italian system. We do not consider possible behavioural effects produced by the tax change. Since these proposals determine a very substantial change in policy rules, some behavioural reactions are to be expected, so that our results can be considered only as an approximation of what could happen in the short run after the reform has been enacted, before the changes in the taxpayers' choices. In any case, the previous discussion of the flat tax reforms that have actually taken place shows that it is very difficult to infer general lessons about the effect of this kind of reform on behaviour, because much depends on the specific circumstances in which the policy change is introduced. Our model is applied to the 2015 EU-SILC database, which contains information on a representative sample of Italian households. The income data have been adjusted according to the administrative evidence about the amount and distribution of the base of personal income tax, taking account of both income underestimation in the survey and of the presence of tax evasion. All monetary values are updated to 2018 prices. The results have been obtained using the sample weights and are therefore representative of the Italian population.

Under the current legislation, the revenue of personal income tax is around 167 billion euro per year. Applying the almost flat tax proposed by the former League-FSM government, according to our simulations, its revenue would fall to 116 billion, with a loss of 51 billion per year. Under the IBL proposal (without considering the subsidy, but only the change in personal income tax rates and base), the estimated revenue would be 130 billion, with a loss of 37 billion. Both proposals, therefore, would produce a substantial fall in income tax revenue.

The distributive effects are quite clear considering the impact on a typical taxpayer. In this case we do not need to use the tax-benefit microsimulation model, but simply apply the different schedules to a representative agent. Table 4, relating to a single employee, shows that both proposals would produce a significant reduction in the individual burden starting from an income of about 30 thousand euros, increasing with income both in absolute and percentage terms. In this table, the values related to the IBL proposal have been obtained using the online calculator made available by its authors (www.25xtutti.it). The table does not consider any increases in other taxes or reductions in public spending that might be necessary to avoid an explosion of the deficit.

INSERT HERE TABLE 4

While Table 4 is constructed with reference to a representative taxpayer, let us now apply our tax-benefit microsimulation model to a sample of taxpayers to verify how the incidence of the tax on the entire national population changes, by deciles of total equivalent family pre-tax income (Fig. 2). The equivalence scale is the OECD-modified one, giving weight 1 to the first adult, 0.5 to other persons aged at least 14 years, 0.3 to the other family members. The continuous line corresponds to the incidence (i.e. average tax rate) of the current personal income tax on pre-tax income. The

curves of the two proposals are almost overlapped up to the seventh decile: the two versions of the flat tax achieve substantially the same type of redistribution for most households. On the two top deciles the incidence is clearly higher under the IBL version due to the higher tax rate. This difference is magnified on the top centile (the richest 260,000 Italian households), for which the incidence of the current income tax is now 35%, which would fall to 18.5% under the League's proposal and to 23.7% under the IBL one (these data are still obtained using the microsimulation model and are not shown in the graph). For the two bottom deciles nothing seems to change with respect to current income tax, while for the rest of the population the tax reduction is increasing both in relative and absolute terms.

INSERT HERE FIGURE 2

In both cases a significant portion of the tax relief goes to the tenth decile (Table 5): 47% for the IBL proposal, 53% for the League-FSM proposal. The middle classes - let's say from the fifth to the eighth decile - would get about 25-20% of the revenue reduction, while the poorest 4 deciles would only obtain 4-7% of the total. Approximately two-thirds of tax savings would go to the wealthiest 20% of households. The reduction in income tax is worth 2-3% of gross income for the middle class, 6-10% for the top two deciles. It is interesting that the tax saving for households just above the Eurostat relative poverty line (which in Italy involves usually 20% of the population) is clearly lower under the League-FSM proposal.

INSERT HERE TABLE 5

To get a simple picture of the distributive impact of the proposals, it is useful to compare the reduction of the Gini index produced by the three cases, i.e. the current legislation and the two flat taxes (Table 6). This reduction is also called the Reynolds-Smolensky index, and can be broken down into the two basic determinants (plus a usually small re-ranking term) of the redistributive effect of a tax (or a transfer), i.e. the incidence of the tax, measured by the average tax rate (more precisely, by the tax rate divided by 1-the tax rate), and the progressivity of the tax, measured by the Kakwani index, which in turn is given by the difference between the concentration coefficient of the tax and the Gini index of gross income. In order to reduce inequality a tax must be progressive, but the amount by which inequality is reduced also depends on the quantitative importance of the tax, represented in the decomposition by the average tax rate. Table 6 makes clear that the two reform proposals have actually strikingly different distributive impacts, with the League-FSM proposal being much less redistributive than the other. Both determine a strong but similar reduction in incidence with respect to the current income tax, but while the progressivity of the IBL proposal is only slightly lower than that of the present tax, the Kakwani index would be more than halved in the other case.

The IBL proposal is less redistributive especially because it would raise less revenue, while it keeps a significant progressivity effect, while the other would add to a greater revenue loss also a drop in the progressivity of the tax. These results underline the importance that the level of the tax rate that is applied to the top deciles has for the overall progressivity effect of the income tax.

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Finally, let us consider what consequences the transition to a flat tax could have on the overall redistributive effect of the tax system. Fig. 3 contains, again by quintiles of total equivalent family

pre-tax income, the total incidence of direct and indirect taxes and social security contributions, both according to current legislation and after replacing the personal income tax with the League-FSM almost flat tax proposal (the result would be very similar in the IBL case). Today the whole tax system is moderately progressive. The incidence decreases moving from the first to the second quintile, due to the very high burden of indirect taxes on the incomes of the poorest families, then increases by ten percentage points. The transition to an income tax with rates of 15% and 20% would have very clear effects especially on the richest 40% of households: the incidence curve would increase much less than before, and the two richest quintiles would pay a percentage of their income similar to that of the poorest 20% of households. Of course the combined effect of taxes and transfers would remain progressive because the latter (in particular the transfers in kind like health care and education) are relatively more important for low incomes, but the progressivity of the tax system would be clearly reduced. The introduction of a new minimum income scheme against poverty in 2019, with a yearly cost of about 7 billion euro (0.4% of GDP), has increased the redistributive impact of cash transfers, traditionally dominated in Italy by pensions, that are only mildly progressive. A move towards the flat tax would therefore definitely shift towards transfers (in particular services like healthcare and education) the task of guaranteeing that the whole tax-benefit system maintains progressive distributive effects.

INSERT HERE FIGURE 3

5. Conclusions

The distributive and revenue effects of the flat tax proposals are quite clear, and represent the main obstacle to the adoption of such a tax in Western European countries that want to maintain a high-quality welfare state. The relevant burden of public debt in the Italian case should suggest further caution, particularly after the Covid-19 crisis that will shift the debt to GDP ratio from 135% at the end of 2019 to values around 160% by the end of 2020. According to EU Commission estimates, the ratio between public debt and GDP should also worsen in Spain, approaching 120% at the end of 2020, with an increase of more than 20 GDP points with respect to 2019.

A reduction in income tax rates could, on the other hand, be important in many respects. Reducing the tax wedge, it could boost economic growth, stimulating both aggregate demand and the supply of productive factors. The growth rate of the Italian economy has been one of the lowest among advanced economies over the last three decades, with a substantial stagnation and two important recessions in 2008 and 2011. Many commentators agree that one of the reasons for this disappointing performance lies in the high tax burden. But to achieve the objective of a reduction in the burden of income tax on earnings, there is no need for the shock of the flat tax, which might spark off a crisis of the public budget and of social spending. A step-by-step approach would be preferable, starting with the reduction of tax rates associated to low-medium income brackets. Under the current legislation, incomes slightly greater than 28 thousand euro, certainly not high, are subject to a marginal tax rate that exceeds 40%, also considering regional and municipal surcharges. The third bracket (from 28,000 to 55,000 euro) is associated with a total tax base of 290 billion, about 33% of the total. Reducing the marginal tax rate on it (or increasing the upper threshold of the second bracket) is certainly a priority. This change would benefit the middle classes and also high incomes, but not as disproportionately as with the flat tax. If the government wants to reduce the tax burden on middle incomes, therefore, there are much better alternatives available.

We must also consider that the outbreak of the economic crisis originating from the Covid-19 pandemic is changing the terms of the debate about the future of personal income tax. Not only

because now it is more difficult to reduce the tax burden, due to the need to limit the explosion of public debt, but also because many governments might be forced to increase taxes, and they will need to target this increase on the rich, because many members of the middle class have suffered severe income losses. Just as the increase in economic inequality in many countries over the last few decades has suggested the need to increase the progressivity of income tax (Diamond and Saez 2011), if the post-pandemic world is to be yet more unequal, then personal income tax should become not less, but more progressive.

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TABLES

Table 1 Tax rates of post-communist European countries which adopted the flat tax.

	Year of the introduction of the flat tax	Range of tax rates before introduction	Tax rate after introduction	Current tax rates
Estonia	1994	16-35	26	20
Lithuania	1994	18-33	33	15
Latvia	1997	10-25	25	20-23-31.4, FT abolished in 2018
Russia	2001	12-20-30	13	13
Serbia	2003		14	20-25, FT abolished in I 2010
Slovak Republic	2004	10-38	19	19-25, FT abolished in 2013
Ukraine	2004		13	18 (+1.5% temporary for military expenditure)
Georgia	2005	12-20	12 without tax allowance area	20 without tax allowance area
Romania	2005	18-40	16	10
Albania	2007	1-20	10	13-23, FT abolished in 2014
Macedonia	2007	15-24	12	10
Czech Republic	2008	12-32	15	15-22, FT abolished in 2013
Bulgaria	2008	10-24	10 without tax allowance area	10 without tax allowance area
Bosnia and Herzegovina	2009	10-15	10	10
Belarus	2010	9-30	12	13
Hungary	2013	17-32	16 without tax allowance area	15 without tax allowance area

Sources: Peichl (2014) and various internet sites, in particular OECD Tax Database

Table 2 Per-capita GDP, public expenditure and revenue of countries with and without flat tax in 2016.

	Per capita GDP (euros)	Public Expenditure/GDP (%)	Social Expenditure/GDP (%)	Revenue /GDP (%)
Russia	9,329	35.78	12.40	36.64
Ukraine	2,186	38.32	15.97	38.51
Georgia	3,866	26.9	10.00	28.52
Lithuania	14,901	33.85	12.69	34.18
Latvia	14,071	37.02	11.46	36.82
Estonia	17,737	38.1	13.90	39.45
Average countries with flat tax	10,348	35.00	12.74	35.69
Austria	44,758	50.77	23.32	49.55
Belgium	41,272	52.7	25.29	50.22
Germany	42,161	43.7	24.01	44.43
Greece	17,891	49.46	22.40	49.68
Luxembourg	100,739	39.53	19.41	42.79
Netherlands	45,638	42.65	21.54	42.99
Portugal	19,838	45.72	18.99	42.4
Spain	26,617	42.22	18.21	37.22
Great Britain	40,367	41.00	16.08	39.03
France	36,857	56.27	25.85	52.96
Italy	30,661	49.57	22.84	46.59
Average countries without flat tax	40,618	46.69	21.63	45.26

Source: World Bank national accounts data and International Monetary Fund, Government Finance Statistics Yearbook

Table 3 Synthetic description of the flat tax proposals

	Current personal income tax (Irpéf)	Bruno Leoni Institute	League – Five Star Movement
Tax rate	5 tax rates, from 23% to 43% (plus local surtaxes)	25%	15% up to 80,000 euro, 20% above
Deductions/tax credits	Many tax credits: by income type, household members, tax expenditures.	Deduction to exempt the poor and make the tax progressive. Abolition of all tax expenditures, except expenditures already occurred.	Deduction of 3,000 euro for each member if household income < 35,000 euro, of 3,000 for each dependent if household income is between 35,000 and 50,000 euro, 0 above. All tax credits abolished except on mortgage interests.
Tax base	Individual income	Household income	Household income
Composition of the tax base	The great majority of the base is made up of labour incomes and pensions.	All incomes received by persons.	Not specified, but all incomes should be taxed at 15-20%.

Table 4 Income tax saving for a single employee under the two flat tax proposals.

Tax base in euro	Almost flat tax 15%-20%		Flat tax 25%	
	euro	% of income	euro	% of income
15,000	86	1%	-45	0%
20,000	911	5%	400	2%
30,000	2,764	9%	2,454	8%
40,000	4,977	12%	3,974	10%
50,000	7,639	15%	5,392	11%
100,000	20,170	20%	14,190	14%

Source: our computations and www.25xtutti.it

Table 5 Yearly average tax relief from the two reforms by deciles of total equivalent pre-tax family income.

	Almost flat tax 15%-20%			Flat tax 25%		
	Yearly average saving	Incidence of saving on income	Distribution of total saving	Yearly average saving	Incidence of saving on income	Distribution of total saving
1	38	0.7%	0%	0	0.0%	0.0%
2	115	0.8%	1%	57	0.4%	1%
3	223	1.1%	1%	361	1.8%	3%
4	447	1.8%	2%	613	2.5%	4%
5	647	2.3%	3%	674	2.4%	5%
6	998	3.0%	5%	878	2.6%	6%
7	1,329	3.3%	7%	1,114	2.8%	8%
8	2,049	4.2%	10%	1,590	3.3%	11%
9	3,485	6.0%	18%	2,449	4.2%	17%
10	10,456	10.2%	53%	6,832	6.7%	47%
Total	1,978	5.3%	100%	1,454	3.9%	100%

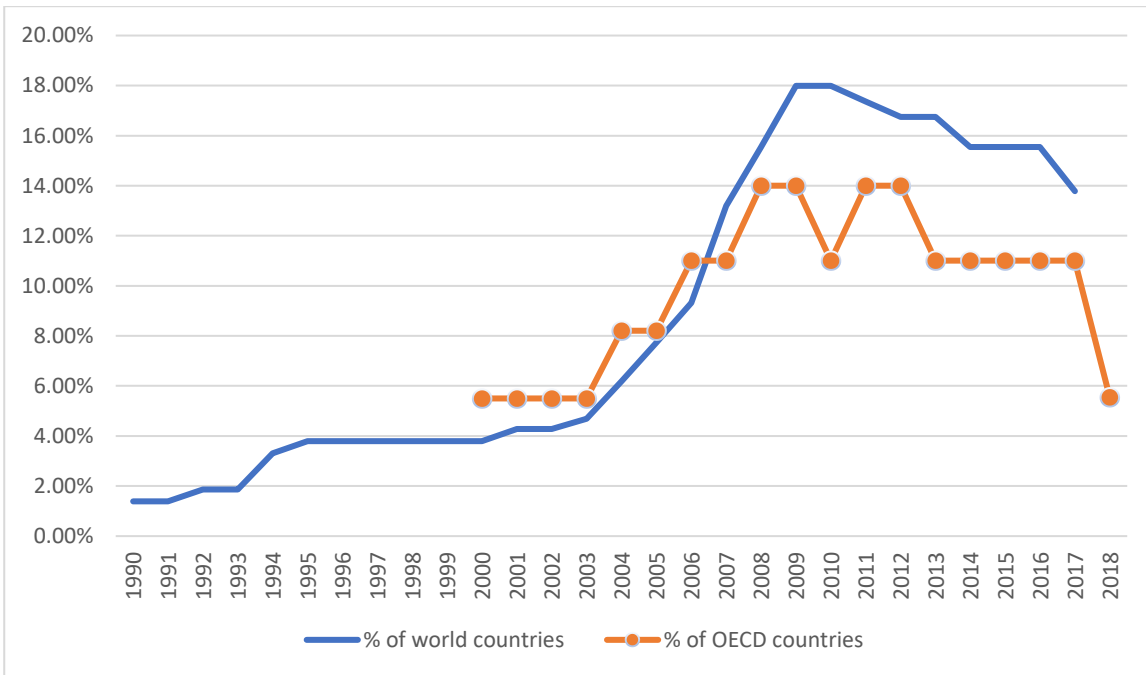
Source: our computations on EU-SILC data.

Table 6 Decomposition of the Reynolds-Smolensky (RS) index in its three components

	RS	Progressivity:		
		Incidence: $t/(1-t)$	Kakwani index	Re-ranking
Current personal income tax	0.0439	0.2174	0.2094	0.0016
Flat tax 25% (IBL)	0.0317	0.1688	0.1919	0.0007
Almost flat tax 15%-20% (League-FSM)	0.0151	0.1629	0.0952	0.0004

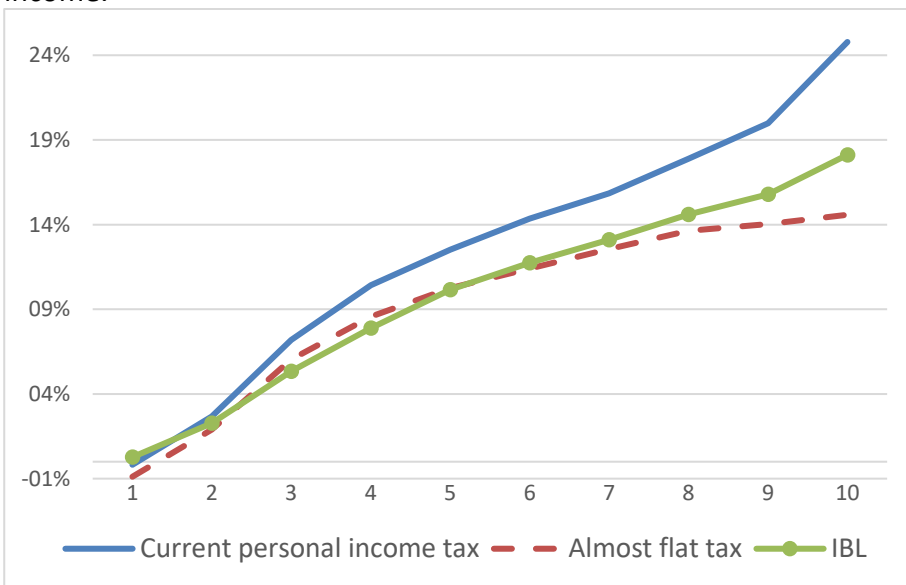
FIGURES

Figure 1 – Share of nations for which in a given year the flat tax applies.



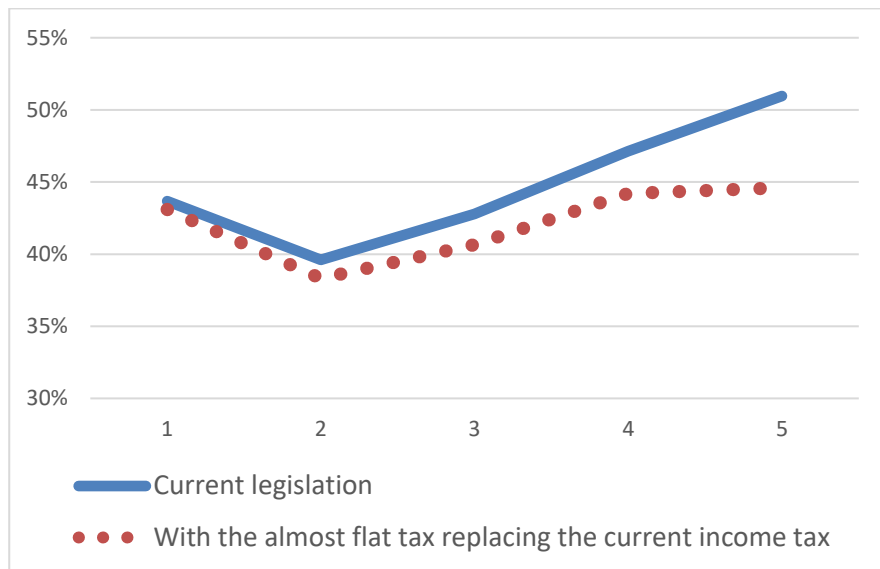
Source: Sternad e Döring (2012), Peichl (2014), Hadler et al. (2007), Keen et al. (2008), World Bank, OCSE

Figure 2 Incidence of income tax on total pre-tax income, by deciles of total equivalent pre-tax family income.



Source: our computations on EU-SILC data.

Figure 3 Incidence of taxes and social security contributions on family pre-tax incomes, by quintiles of total equivalent pre-tax family income.



Source: our computations on EU-SILC data.