Social Economic Debates
Volume 14, Issue 1, 2025
ISSN 2360-1973; ISSN-L 2248-3837

Proposals for an integrated and efficient system of income taxation in the digital age

PhD. Candidate Cătălin TIMIŞ
Affiliation: University of Oradea, Faculty of Economics, Doctoral School in Economic Sciences, Universității Street, no. 1, Zip Code 410087, Oradea, Romania
E-mail: catalintimis3@yahoo.com

Student Bianca Andrada STAN
Affiliation: Babes-Bolyai University, Faculty of Business, Horea Street, no. 7, Zip Code 400174, Cluj-Napoca, Romania
E-mail: bianca.andradda@gmail.com

PhD. Student Alexandra ȚÂRĂU
Affiliation: "1 Decembrie 1918" University of Alba Iulia, Faculty of Economic Sciences, Doctoral School of Accounting, Gabriel Bethlen Street, no. 5, Zip Code 510009, Alba Iulia, Romania
E-mail: alexandra.tarau.sdc23@uab.ro

PhD. Student Emil MUNTEAN
Affiliation: "1 Decembrie 1918" University of Alba Iulia, Faculty of Economic Sciences, Doctoral School of Accounting, Gabriel Bethlen Street, no. 5, Zip Code 510009, Alba Iulia, Romania
E-mail: emil.muntean.sdc23@uab.ro

Abstract: This research aims to show that the taxation of income from capital and income from gainful activities are closely connected with economic and fiscal principles, which are a highly important component of understanding and optimizing tax policies in contemporary economies. The correct valuation of income from the exploitation of own and labor capital, and the calculation and implementation of optimized tax rates are essential to be able to ensure a sustainable fiscal balance, to increase economic efficiency and to maintain social equity. The importance of researching these principles goes far beyond the theoretical and academic framework, with major practical applications for governments and economies of all countries around the world, all in the context of increasing economic globalization and the increasing digitalization of financial markets. The useful exchange of information between more and more countries of the world on asset holdings and capital income can effectively combat tax evasion, especially in the context of capital transfers involved in international investments. As digitization makes its presence increasingly felt, the integration of tax information can help governments to create more transparent and fairer tax systems.

Keywords: tax policies, digitalization, tax collection efficiency

JEL classification: E62

Introduction

If we look from an economic point of view, a very clear and detailed understanding of the taxation of capital income essentially allows the realization of a tax system capable of minimizing economic distortions and promoting economic and tax efficiency. If capital income is not viewed in a non-optimal way, very negative

effects on the investment and financial decisions of citizens and companies can arise. Optimal taxation of capital income is about balancing government or competitive market incentives to save and invest with the intrinsic need to raise public revenues. If the overall fiscal framework is not conducive, capital has a tendency to be invested in undesirable directions that can undermine both market stability and the efficiency of allocation of economic resources.

Looking from a tax perspective, the theoretical and empirical study of the taxation of income from capital and labor makes a decisive contribution to fairer, sustainable and robust tax collection systems. Public authorities in virtually every country need stable sources of revenue to support public spending, and optimal taxation of capital and labor is an unavoidable part of this process. Applying non-discriminatory, homogeneous tax rates to different forms of capital income such as interest, dividends and capital gains can effectively prevent tax arbitrage. If widely varying forms of income are taxed differently, there is a high risk that individuals and companies will attempt to minimize the tax burden by shifting capital between different asset classes, precisely by taking advantage of the comparative advantages offered by different tax treatments. The digitization and interconnection of asset registers are real and realistic solutions that offer valuable opportunities to implement a highly coherent system in which all income from the exploitation of capital is treated homogeneously. This mechanism would clearly simplify tax administration, making it more efficient and fairer. If we look from the point of view of tax administration, the detailed study of these economic and tax concepts becomes of great importance in creating the design of more complex tax policies, tailored to the current needs of the economy and society. The massive digitization of the tax system discussed in the chapter opens new possibilities for streamlining tax collection and improving tax compliance. Public authorities have, for example, digital technologies at their disposal to effectively use detailed registers of income and assets, facilitating the smooth functioning of a more uniform tax system and reducing the risks of tax evasion.

Another important administrative implication is to increase the capacity of digital systems to better monitor and manage taxpayers' income and assets, both nationally and internationally. The useful exchange of information between more and more countries of the world on asset holdings and capital income can effectively combat tax evasion, especially in the context of capital transfers involved in international investments. As digitization becomes increasingly present, the integration of tax information can help governments to create more transparent and fairer tax systems.

The particularly striking economic, fiscal and administrative importance of a thorough study of the taxation of capital and labour income in the context of the technical possibilities offered by digitalization stems from the need to ensure a tax system that is fair, efficient and adaptable to the new economic and technological realities.

1. Literature review

National tax systems in contemporary economies are, in most cases, simplified from theory and structured for ease of administration. Most national models prefer taxation through a progressive tax system, most commonly known as a synthetic income tax system (Rubolino & Waldenström, 2020). In such a systemic

typology, each type of income, whether from labor, investment or other various sources, is subject to the same general tax rules.

For example, a tax system characterized by duality may tax labour income and capital income in distinct ways, applying differentiated rules for each of these two categories. In the latter example of a tax system, the marginal tax rate on labor is determined exclusively by an individual's earnings from gainful activities and is not influenced by the level of income from other sources, such as investments or property. In a relatively similar way, the tax on capital income is based exclusively on earnings from the exploitation of equity capital, independently of wage earnings. This separability may simplify the computational and tax collection processes, but it has some drawbacks, limiting the flexibility of governments to adjust tax rates to better reflect the overall financial situation of the taxpayer.

A summary of the sub-topics related to tax enforcement and revenue collection is summarized in Table no. 1.

Table no. 1: The role of digitization in tax enforcement and revenue collection

Theme	Relevant information	References
Tax Enforcement Technology	Digitization improves the efficiency and effectiveness of tax enforcement, allowing more accurate collection.	Ranchordas and Scarcella (2021); Boar and Midrigan (2022); Agrawal and Fox (2021); OECD (2021); Bellon et al (2022); Walker (2022); Alm, Bloomquist & McKee (2020) Slemrod (2019); Ranchordas & Scarcella (2021); Keen & Slemrod (2021); Xiao & Shao (2020).
Reducing transaction costs	A digitized implementation can lower application costs and bring more efficiency in revenue redistribution.	Olbert and Spengel (2019); Ferriere et al. (2023); Chakraborty (2020); OECD (2021); Bellon et al (2022); Rogoff (2020); Grinberg (2012); Xiao & Shao (2020); Martínez-Vázquez et al. (2023); Keen & Slemrod (2021);

		Tsindeliani et al (2021).

Source: own construction based on literature review

Broadly speaking, tax rates on earned income are calculated independently of income from various other sources. Many countries around the world implement wealth tests or define asset-related criteria when determining eligibility for social benefits, including, for example, health insurance, disability benefits, unemployment or social assistance. These methods of testing induce a form of interdependence between tax systems on the one hand and social benefit programs on the other.

These synergies and correlations raise the question of whether they are socially acceptable to the majority of citizens and how they can be managed effectively. If national public authorities decide that such linkages between tax systems are necessary in order to achieve tax equity and fair redistribution, in these circumstances digitization becomes of utmost importance for the administration of these complex systems. Digital technologies can facilitate the integration and analysis of data from different types of income and assets, and thereby enable tax authorities to determine much more accurately the taxes due and the corresponding benefits for each individual taxpayer.

Mirrlees' (1976) now classic model of optimal taxation has been a valuable theoretical starting point for the discussion of tax interdependencies. This model stipulates that the ability to earn, i.e. labor income, is the primary determinant of the economic differentiation of individuals. On the basis of his own model, Mirrlees concluded that optimality-oriented tax systems should apply separate and independent taxes on income and assets respectively. So the very idea of creating complex interdependencies between different tax systems was not considered absolutely necessary. Subsequently, even many years later, some studies (Chari, Nicolini, & Teles, 2020) confirmed that interdependencies can be considered as absolutely unnecessary in such contexts characterized by simplicity. Therefore, in the fundamental scenarios in Mirrlees' descriptions, digitization would not be able to bring significant benefits by creating additional linkages between different tax regimes.

The tax simplification described by Mirrlees' model is not always applicable in national economic realities. In practical situations, individuals are not realistically differentiated only by their ability to earn. Many other characteristics, such as personal preferences, initial or acquired endowments or family structure, influence economic behavior and the individual's ability to generate income. Ultimately, these significant differences make the application of a unitary tax system clearly less efficient and, in some particular cases, may even require the introduction of interdependencies, synergies or correlations. Empirical work of a recent nature, such as that of Manski (2014), has extended the optimal tax model by taking into account several dimensions of individual behavior and preferences. These investigations of individual preferences and tax systems have shown that, in more complex situations, tax interdependencies may even become indispensable to ensure a fair distribution of taxes and benefits.

In all this context, digitization has the historic opportunity to become an extremely valuable tool. It not only enables the collection and analysis of data from numerous and varied sources, but also facilitates the

integration of information about earnings, assets, and other economic characteristics that are tax relevant for taxpayers and authorities (Larikaman, Salehi, & Yaghubi, 2024).

In today's context of globalization and interconnected economies, digital technologies also have a role to play in facilitating the international exchange of tax data between jurisdictions.

Also with digitization, authorities in several countries can work together more efficiently and exchange information about income and financial accounts held in other countries, reducing the scope for cross-border evasion. International agreements between countries, such as those promoted through the OECD's formal framework, allow the automatic exchange of tax information between national jurisdictions and help create a more transparent and level playing field.

Through all these described mechanisms, digitization manages to bring a number of advantages in the administration of highly complex tax systems and in the management of the interdependencies that arise between different tax regimes and the social benefits provided to the population (Tsindeliani et al., 2021).

Increasingly sophisticated and efficient technologies can make their contribution to creating more integrated and fairer tax systems, capable of efficiently and rapidly managing the interdependencies between different sources of income and benefits; moreover, doing so without compromising fairness or transparency. It can therefore be argued that digitization is a much-needed solution for the future of taxation, enabling national governments and local authorities to address more effectively the challenges brought about by global mobility and the increased complexity of modern economies.

In tax theories, an optimized tax system should include a certain limited amount of interdependencies between tax regimes, i.e. equal to the number of characteristics that differentiate individuals. In cases where the diversity of features is higher, the interdependencies will require higher integration within the tax system. The most important goal related to these interdependencies is to succeed in decreasing the number and frequency of economic distortions caused by taxes (Kjoseva, 2021).

Digitalization also has a very important role to play in the implementation of such highly complex tax systems. Through the use of digital technology in taxation and economics, national public authorities can set up databases to collect and analyze information about taxpayers' labor and capital income. This data can then be highly operationally processed to adjust tax rates in real time, taking into account changes in the economic behavior of individuals in society. Modern digital technologies can also help to promptly identify tax avoidance behavior by very operationally finding those financial flows that are susceptible to tax manipulation.

To understand more deeply the need for interdependencies in taxation, we need to turn our attention to cases in which individuals are observed to be differentiated along several economic dimensions other than individual earnings. For example, they may exhibit heterogeneous consumption preferences, different saving rates or varying financial needs (Dehnert & Schumann, 2022). If public authorities are able to identify and measure these differences and act by adjusting tax schemes accordingly, they can then redistribute income in a clearly more efficient way, better targeting aid and social benefits.

In the economic literature, this practice is defined as cheating the system because taxpayers create compounding deviations in their behavior to reduce their tax liability. As a practical example, they might artificially simulate their earned income and invest more in equity, knowing that these two types of income are taxed separately.

So not only does the use of modern technology succeed in making it easier to enforce taxes correctly, it also leads to situations where tax evasion and tax fraud become much more difficult to do in practice.

Empirical research provides several concrete examples, one of which is inspired by the applications of economists Diamond and Spinnewijn (2011). The original hypothesis assumes that labor income is taxed in this system, but capital income is not taxed at all. In such situations, individuals who manage to save more and have a lower time preference might be willing to choose to work less in the present and save more for a more distant time horizon. Individuals with these behaviors would thus try to avoid taxes on labor income by directing their earnings into non-taxable investments. Such rational strategies by individuals can distort the labor market, thereby reducing the labor supply and affecting the tax base.

Digitization would thus not only succeed in decisively simplifying the administration of complex tax systems, but could even enable more flexible and fairer tax policies (Tsindeliani et al., 2021).

For example, if national government authorities observe that an individual is attempting to minimize tax on personal earned income by manipulating capital gains, they can adjust taxes without further argument to quickly and effectively counter this strategy. This important flexibility is impossible to achieve under traditional or current systems, where taxes are set in annual tax frameworks and changes can only be made over the long term and with the involvement of legislators.

Even more than that, digitization allows, through associated technologies, better collection and management of data of any economic nature, thus facilitating collaboration between the countries of the world in the fight against transnational tax fraud and evasion. With the help of new and advanced technologies, governments can exchange useful taxpayer information with other states, thus detecting asset transfers to offshore accounts and other tax avoidance strategies much more easily (Grinberg, 2012).

2. The impact of lifetime income taxation

The most important idea that has been addressed above emphasizes very precisely the importance of a tax system that is able to mirror the complexity of each individual's economic life. A tax system based on principles of optimality should not be static or simplistic; on the contrary, it should take into account the diversity of individuals' financial characteristics and circumstances over the course of their lives.

This means that in the realistic circumstances in which people are evolving, their earnings change, and so do their abilities to earn income (Wachter, 2020).

An absolutely optimal tax approach should be based on an individual's total historical earnings, not just on momentary, observable annual or monthly income. Such an approach implies that there are real interdependencies between annual earnings and the tax actually levied, so that the marginal tax rate for a point in time in a given year depends not only on the income earned in that time period, but also on past and even future income. In this way, taxation must take into account the whole economic picture of the individual, which in itself reflects the individual's capacity to generate income over a lifetime.

From a purely theoretical perspective, this approach may seem highly sophisticated, but this is where digitization comes in. Digital technologies enable governments to collect, store, analyze and correlate taxpayers' economic data over long periods of time. Through digitization, specialized public authorities can more accurately track a person's earnings over several years, including creating a complete financial profile. These feasible steps not only simplify the taxation process, but also effectively facilitate a fairer redistribution of the revenue collected to the budget, as the tax system will be able to adjust tax rates precisely for the purpose of better illustrating an individual's actual earning capacity (Junquera-Varela & Lucas-Mas, 2024).

For example, if an individual realized high earnings one year but lower income on other occasions, a traditional tax system would react by imposing a flat rate based on annual income. In contrast, a digitized and sophisticated, much more adaptive system can recognize these fluctuations and adjust the tax rate operationally, allowing the taxpayer to avoid being overtaxed only punctually, momentarily, because they had a more profitable year. Governments can therefore, through such more elastic, adaptive systems, redistribute the resources at their disposal more efficiently, ensuring that those who have, on average over a longer time horizon, lower lifetime incomes benefit fairly from lower taxes and more opportunities for support.

Individual earnings histories thus provide an important set of relevant data on an individual's ability and opportunities to earn income. By analyzing these highly complex datasets, authorities can appropriately set fairer and more efficient taxes. Digitization also allows governments to use more interesting signals to infer how high these individual citizens' abilities are and to adjust taxes in an informed way. Instead of a uniformized and unindividualized taxation, a modern conceptual and technological system can condition tax rates on a person's entire economic trajectory over their lifetime, thereby reducing efficiency costs and achieving redistributive goals in a fairer way (Turina, 2020).

A digitized tax system may even allow access to even more sophisticated solutions in highly volatile situations where individuals have different earning abilities in each year of their lives. In such situations, the traditional taxes currently used, which do not take these variations into account, fail to work optimally. Instead, a non-linear approach allowing dynamic adjustments of tax rates would be needed. Today's rigid 'one size fits all' approaches (Fitzpatrick & Thompson, 2010) cannot cover the complexity of realities in today's economies, where individuals go through successive career changes, periods of unemployment, education or retirement.

Highly digitized tax systems allow national governments to collaborate more effectively internationally. In a contemporary economic world in which capital and labor are increasingly mobile, and individuals can move their income and assets to many countries around the world, digitization is becoming a truly indispensable

tool to combat global tax evasion (Martínez-Vázquez, Sanz-Arcega, & Martín, 2023). Through secure data exchanges between countries, authorities have effective possibilities to monitor money transfers and investments that cross national borders, drastically reducing the scope for tax avoidance. This adds a higher level of transparency and security, helping to protect the integrity of national tax systems. A very brief overview of the literature on international cooperation and cross-border challenges is given in Table no. 2.

Table no. 2: International cooperation and cross-border income tax challenges

Theme	Relevant information	References
International information exchange and cooperation	Digitization and international registries help share data to combat global tax evasion.	Hanappi et al. (2024); OECD (2014); Zucman (2015); Grinberg (2012); OECD (2021); Alm et al (2020); Keen & Slemrod (2021); Bunn et al (2020); Fichtner & Heemskerk (2020); Xiao & Shao (2020); Clavey et al. (2019).
Residence versus source taxation of income	The choice of withholding or residence taxation can be influenced by digitization, which allows global asset tracking.	Revesz (2020); Ranchordas and Scarcella (2021); Nakayama et al. (2021); Grinberg (2012); Devereux & Vella (2018); Feldstein & Wrobel (2017); OECD (2021); Keen & Slemrod (2021); Nakayama, Perry & Klemm (2021); Torgler & Murphy (2019); Alm, Bloomquist & McKee (2020).

Source: own construction based on literature review

3. The redistributive efficiency of progressive lifetime income taxation

Theoretical equity models of tax systems stipulate that taxation based on an individual's entire lifetime can be fairer and more efficient than taxation based on each year's income. The idea is essentially quite simplistic: if two individuals realize similar total lifetime incomes, but one has more heterogeneous earnings

from one year to the next, he or she may find himself or herself paying more tax, globally speaking, in a progressive annual system (Boar & Midrigan, 2022).

This discrepancy in tax liabilities arises mainly because of the way smaller or larger fluctuations in income are treated by annuity-based tax systems. Instead, a calibrated and life-course-focused tax model would be able to calculate taxes due based on total cumulative lifetime earnings, thus eliminating the problem of inequality caused by severe year-to-year variations.

Another intuitive advantage of lifetime taxation is that it provides a much more accurate measure of a person's economic capacity than annual taxation. Virtually all individuals' incomes can vary very consistently over the years, depending on career changes, economic status, investments and other factors. On the other hand, financial markets are often characterized by imperfections related to risk and capital constraints. These may include the lack of effective insurance for risks related to earned income and the exploitation of capital or limits on borrowing and liquidity. Tax systems based on the annularity of income reporting fail to compensate for these imperfections and even put undue pressure on individuals in periods of lower income, while periods of higher income are more easily taxed.

The transition to a system of lifetime taxation could address these problems by redistributing income much more effectively. By reducing the tax burden on the individual when they earn lower incomes and increasing it in higher-income brackets, governments might be able to smooth economic earnings discrepancies and could even provide more adequate support when it is most needed (Nallareddy, Rouen & Serrato, 2022). This type of taxation would also appreciably mitigate the distortions created by the incentives under current systems to shift income between periods with more aggressive and more permissive tax regimes, respectively. For income in general, but particularly for income from the exploitation of capital, this flexibility would reduce tax avoidance tendencies, especially through highly complex tax planning strategies such as deferral of gains or loss carry-forwards.

With the wider use of digital technology, governments will be able to monitor the cumulative earnings of each taxpayer and even adjust tax rates accordingly. In other words, instead of focusing only on a person's earnings in a single year, tax systems will be able to take into account a person's entire financial history from the beginning to the end of their active work (Afield, 2021). By applying this principle, an individual who occasionally earns more money in one year, but has lower income in others, will not be unfairly penalized by the tax system for that temporary fluctuation. This new tax paradigm helps to achieve a fairer and more efficient redistribution of resources, and would even facilitate the achievement of complex fiscal and social goals at much more moderate efficiency costs.

Also, through the technologies associated with digitization, national tax authorities can create exact mathematical algorithms that automatically adjust all marginal tax rates by multi-year cumulative earnings (Walker, 2022). If, in contrast, a taxpayer had higher net earnings in the early years of employment, but subsequently his or her earnings declined, tax rates could be adjusted accordingly to reflect this decline in

productivity. This reduces the tax burden during periods of low earnings. This automatic tax adjustment allows the system to tax more accurately and fairly, and it is precisely digitization that makes such flexibility possible.

Another benefit that can be derived from digitization is the significantly greater ability to combat complex and inventive tax avoidance strategies. In income-based tax systems, taxpayers have multiple opportunities to shift income from one year to another in order to benefit from lower tax rates. These behaviors are even very common for capital income, where gains can be manipulated to defer or report only when deductions or tax credits are available. In contrast, a highly digitized tax system that tracks lifetime earnings could technically prevent these tactics (Walker, 2022).

Digitalization thus makes its significant contribution not only in simplifying tax administration, but also in ensuring fairness and equity in modern tax systems (Martínez-Vázquez, Sanz-Arcega, & Martín, 2023). Through long-term monitoring of individuals' earnings and dynamic adjustment of tax rates, public authorities will be able to drastically reduce the impact of temporary fluctuations in labor income and can redistribute income more efficiently. This means that digitization not only supports a more transparent and accurate tax system, but contributes more generally to the economic stability of society by flattening the effects of financial shocks at the level of the individual.

Another argument in favor of digitization is the ability of the digitized tax system to collect and analyze data continuously and in real time. This technological facility allows public tax authorities to adjust policies and methods of intervention more quickly in order to react to economic changes without long and unwanted delays. In the past and even today, changes in fiscal policy were rather characterized by slowness and complexity, requiring a plethora of resources and generous time for implementation. Partially now and much more extensively in the future, with the help of digital systems, changes can be made operationally, and the necessary adjustments in the system can be applied automatically without extensive manual intervention. There is, therefore, including a paradigm shift in the way taxes are administered, allowing authorities to be more flexible and efficient (Belmonte-Martin, Ortiz, & Polo, 2021).

4. Joint taxation of labor and capital income

As already mentioned in our theoretical assertion, individuals differ in a variety of economic and personal characteristics. As a result of this variety, interdependencies in tax regimes are not only desirable, but become necessary. The concept of the "New Dynamic Public Finance" conceptually emphasizes the importance of these interdependencies, including arguing that they are very important in the process of ensuring an efficient redistribution of income and resources (Fisher, 2022).

Such a perspective suggests that progressive or other non-linear taxes on labor, consumption and capital income are vital parts of an economic and fiscal model in which individuals have different lifetime earning capacities. This approach has been extensively explored in the finance literature, and it has been shown theoretically and empirically that efficient and equitable tax regimes should be highly dependent on the levels of assets and capital income that individuals have. Thus, if viewed through the spectrum of optimality, taxation cannot be

applied uniformly and will ultimately have to be tailored to the economic circumstances of each individual. An overview of the main themes relating to digitization and capital income taxation is summarized schematically in Table o. 3.

Table no. 3: Digitization and capital income taxation

Theme	Relevant information	References
Capital income taxation and fairness	Digitization helps the uniform application of capital gains taxes, reducing tax inequities.	Hanappi et al (2023); Xu and Shao (2020); Ranchordas and Scarcella (2021); Grinberg (2012); Devereux & Vella (2018); Feldstein & Wrobel (2017); Keen & Slemrod (2021); OECD (2021); Gerritsen et al (2024); Scheuer & Slemrod (2021);
Monitoring external assets	Governments can monitor capital gains held abroad, reducing cross-border tax evasion.	OECD (2014); Zucman (2015); Fichtner & Heemskerk (2020); Grinberg (2012); Devereux & Vella (2018); OECD (2021); Torgler & Murphy (2019); Keen & Slemrod (2021); Rogoff (2020); Xiao & Shao (2020); Zucman (2015).

Source: own construction based on literature review

Taxation of individuals' assets and capital gains becomes very important in this context. When the redistribution of income is conditional on the level of assets that individuals have or on the gains realized from the exploitation of investments, governments have the possibility to avoid distorting the economic behavior of individuals. To explain in more detail, those with lower lifetime incomes are not discouraged from working or saving, since the tax system is designed to be less aggressive in periods of low lifetime income and fairer in periods of higher lifetime income.

Fiscal interdependencies, while having high complexity, can instead generate significant gains for society as a whole.

Some research has focused on demonstrating that tax systems that include checks on household assets and make taxation conditional on wealth levels are much more likely to be able to achieve better redistribution and increase overall welfare. But there are other prerequisites for these models to work, such as advanced capabilities to collect and manage taxpayers' financial data. This is where digitization comes in, as we have repeatedly pointed out, making it possible to monitor economic and personal information with high accuracy and efficiency (Martínez, Arzoz & Arregui, 2022).

An additional advantage provided by digitalization is its ability to substantially improve the trade-off between equity and efficiency in tax systems. While it is a desirable objective as a function of public finance, increasing revenue redistribution also brings with it higher efficiency costs, as higher tax rates can discourage work and saving. But there are also solutions, because by collecting and analyzing data digitally, governments have the chance to adjust tax rates in such a way as to minimize these negative effects. The benefit is lower taxes for the same overall redistribution of income or, conversely, more redistribution without increasing the overall tax burden on taxpayers.

But digitization can do more than that, as it not only monitors income, but also manages information about assets and capital. Many countries around the world are now deploying technologies that allow them to access financial data at high speed and with high security, facilitating a global understanding of taxpayers' economic situation. For example, by using digital databases and sophisticated computational algorithms, governments can more easily identify discrepancies and suspicious behavior (Simonofski et al., 2022). In circumstances where an individual reports low income but instead owns property or other significant assets, a digitized system can automatically flag these mismatches, allowing authorities to investigate in a targeted manner and adjust taxation accordingly.

Introducing interdependencies into national tax systems through the use of new technologies can boost overall economic efficiency in a society. Taxes that are directly based on the level of assets or capital gains allow national governments to provide financial support to those who have had periods of low lifetime earnings, but at the same time without creating negative incentives (Auerbach & Gale, 2022). As an effect, it will be found that people with low earnings are not discouraged from saving or working more, as they generally realize that taxes will be lower when earnings are lower. This is the mechanism by which digitization allows tax rates to be adjusted automatically, including by reducing administrative burdens and thereby allowing for fairer and more efficient tax enforcement.

Another advantage of tax digitization mentioned in the literature is that it allows for more flexible and adaptable tax administration. In a more traditional system, changes to tax policies over time are slow and often encounter bureaucratic obstacles. With modern digital technologies, rapid updates of algorithms developed for tax purposes are allowed, and adjustments are made almost instantaneously in tax rates (Evans et al., 2022). These opportunities provided represent a fundamental change in the framework for tax administration, allowing governments to be more responsive to rapid change and adjust policies in line with inherent economic changes and taxpayer needs. A summary of the themes related to optimizing the taxation of earned and consumption income is summarized in Table no. 4.

Table no. 4: Optimizing taxation of earned and consumption income

Theme	Relevant information	References
Redistribution through consumption and income taxes	Consumption taxation becomes an effective solution in developing economies where labor income is difficult to verify.	Rogoff (2016); Gupta and Jalles (2022); Saez (2002); Alm et al (2020); Devereux & Vella (2018); Keen & Slemrod (2021); Torgler & Murphy (2019); OECD (2021); Fabris (2019); Blasco et al. (2023); Gupta & Jalles (2022).
Income tax and fairness	Tax progressivity can improve equity, but it comes at an efficiency cost in most tax systems.	Jacobs and Boadway (2014); Mirrlees (1971); Kaplow (2011); Alm et al (2020); Devereux & Vella (2018); Feldstein & Wrobel (2017); Keen & Slemrod (2021); Torgler & Murphy (2019); Slemrod (2019); Gupta & Jalles (2022); Advani & Tarrant (2021).

Source: own construction based on literature review

5. Digitalization-based proposals to improve tax enforcement technology

To summarize, digitization has the potential to fundamentally transform tax enforcement and management, increasing the efficiency of tax collection and the fairness of revenue redistribution. The advanced technologies associated with this phenomenon allow governments access to more accurate data on individual and corporate incomes, facilitating the creation and implementation of more calibrated and equitable tax systems. The automation imposed by digitization reduces the costs of revenue collection budget, making it possible to lower tax rates without reducing the amount needed to redistribute to society. In the literature-based reviews, five key concrete proposals to improve tax enforcement technology were identified:

1. Detailed and accurate data on taxpayers' income: The digitization of tax systems provides the opportunity for public authorities to obtain more complex and accurate data on the income earned by individual taxpayers.

2. Monitoring and analyzing the connections between wealth and capital income: Digital technologies are making it easier to get a clearer picture of how wealth is connected to capital income. Wealth is considered to consist of both traded assets (e.g. equities and bonds) and less or no traded assets (real estate, private pensions). If data on property and capital income, including interest, dividends, capital gains, rental income, among others, are correlated by automated algorithms, public authorities would have the technical capacity to better track wealth accumulation and could implement more appropriate and equitable tax measures to address economic inequality (Kwilinski, Vyshnevskyi, & Dzwigol, 2020).

3. Automation in the process of international information exchange: Digital technologies enable the creation of international registers to track assets and capital income globally. This technology leads to facilitating the exchange of information between countries in faster and more accurate ways, thereby helping to combat cross-border tax evasion (Müller, Veile, & Voigt, 2020). The automation of all these information processes simplifies collaboration between countries around the world and allows for better monitoring of assets held abroad by own nationals, providing a highly efficient mechanism for automated reporting between tax authorities in different countries.

4. Increasing the role of financial institutions as third party reporters: The technologies associated with digitization allow financial institutions to act more effectively as third party reporters for the government, enabling them to provide clear and detailed information on the capital income and assets held by citizens. In turn, banks and other financial institutions can automatically collect and report relevant financial data such as dividends, interest and other sources of passive income. This encourages a drastic reduction in the scope for concealment of income and facilitates a more transparent and fairer tax system (Chakraborty, 2020).

5. Increasing the role of consumers as third-party reporters for VAT and sales taxes: Digitization can also bring the systemic ability to use electronic payments to track and report consumer taxes, e.g. VAT or other sales taxes. With transactions made exclusively in electronic currency, debit and credit cards, purchase and payment information can be collected and analyzed automatically and immediately, providing a straightforward and efficient method of verifying tax compliance (Bunn, Asen, & Enache, 2020). This automation, given the absence of cash in the first place, simplifies the sales tax collection process and secondly, reduces the possibility of tax fraud in the retail sector.

6. The digital revolution in taxation: proposals for fairness and efficiency

We have already investigated how digitization can fundamentally change tax administration, reducing bureaucracy, reducing costs and increasing levels of transparency and efficiency. Technology-enabled platforms make it easier for governments to monitor almost all financial transactions and ensure tax compliance. This can even reduce taxes without reducing revenue collection. The fiscal success of digitization is not certain, as it also

depends on the implementation of secure and accessible digital systems. Based on the literature reviewed, we summarize some novel solutions of digitization in support of balancing tax fairness and efficiency, with a focus on tax regimes that support redistribution without excessive taxes, reducing costs and stimulating a stable and fair economy.

1. Multinational common registers of assets and shares: We see great merit in the creation of internationalized databases to record assets and shares held by taxpayers in multiple countries, which would allow governments to tax capital income based on the taxpayer's domicile rather than the source of the income (Fichtner & Heemskerk, 2020). One concrete effect would be to profoundly change the way dividends are taxed, and could thus offer the possibility of using the corporate income tax. This could be seen as a form of dividend withholding tax or it could abolish this type of tax altogether, thus reducing cross-border tax avoidance. Technologies to digitize these registers would ensure clear and accurate asset tracing.

2. Dual tax system based on integrated data on assets and capital income: If data on the quasi-totality of a taxpayer's assets and capital income can be successfully digitized, a dual tax system could be created and implemented. In this type of system, all sources of income and wealth holdings are interconnected and subject to an absolutely unitary tax scheme (Xiao & Shao, 2020). Such a system would operate with a concept called "synthetic capital income" at its foundation. It would ensure fair and optimally computed taxation for citizens, diminishing the tax differentials that exist in traditional systems between different types of income.

3. Specificities of progressive consumption taxation in emerging economies: In developing economies, the sudden deployment of biometric identification systems and electronic transactions is enabling ethnic access to progressive consumption taxation, which is more difficult to achieve in traditional systems. The use of digital systems could allow efficient data collection on consumption behavior. This would make it possible to apply differentiated taxes according to the type of product that is to be more or less tax-promoted, without the need for reduced VAT rates on essential goods. This method is currently used to support revenue redistribution to vulnerable groups (Gupta S & Jalles, 2022).

4. Non-linearity of consumption taxation of perishable and non-transportable goods: Digitization can ethnically allow for non-linearity in consumption taxation specifically targeting perishable, non-perishable and hard to transport goods. Using such an option could encourage more sustainable consumption behavior. In addition, it would allow taxes to be collected in a more efficient way, without such measures unduly discouraging other forms of consumption (Blasco, Guillaud & Zemmour, 2023).

5. Taxing on average annual cumulative income and earnings history: the idea is by no means recent, inspired by Vickrey (1947), who suggested a form of taxation that taxes the average annual cumulative income of an individual. As a possible alternative, marginal tax rates could be continuously calibrated to an individual's lifetime earnings history (Larrimore et al., 2021). Digital technologies can provide the technical support for accurate monitoring and calculation of these data. This allows for fairer tax policies that are more equitable and tailored to the economic realities of taxpayers.

6. Joint taxation of wage and capital income: Such a unitary system would simplify the tax structure and would succeed in reducing the inequities that can arise in traditional systems between those who derive their income exclusively from labor and those whose primary source of income is from investment and other assets. Digitization of the economy and automatic access to the relevant data would make it possible to integrate these data for accurate calculation of taxes due (Gerritsen et al., 2024).

7. Joint global taxation of individual and household income: A tax proposal facilitated by digital technologies would be to tax individual and household income jointly. This would achieve a significantly higher distribution and an adjustment of tax rates to the real economic situation of households (Bronson, Haanwinckel & 2024). It is precisely digital technologies that would simplify the collection and correlation of data at the household level, which are absolutely essential in this process, ensuring fair and transparent tax calculation.

8. Personalized tax systems based on the socio-economic profile of the population ("labeling"): The proposal builds on the concept of "labeling" introduced by Akerlof (1978); tax systems can design their tax systems to take into account various individual or household characteristics, such as gender, age, health status or disability. Essential to such a design is a system that makes it possible to collect and analyze these data. This would give governments the opportunity to implement tax policies that are personalized to citizens and adjustable according to taxpayers' needs and capabilities (Hammond et al., 2023).

7. Conclusion

Different tax treatments of different sources of capital income, such as interest, dividends, capital gains or rents, often work in favor of tax arbitrage. This favors, among other things, for example, the transfer of capital of the same individual or company from one asset to another, bringing with it market distortions and economic imbalances. The increased digitalization of financial markets and the national and international interconnection of asset and income registers open new avenues for more uniform and coherent tax systems. The concept of "synthetic capital income", still largely theoretical for the time being, proposes a national tax system in which all capital income is taxed at the same rate, thus ensuring greater fairness and minimizing the temptation of tax arbitrage. In an increasingly digitized economy and society, the interdependencies that arise between income from labor and income from the exploitation of capital can be better monitored and used to develop dual or synthetic tax regimes, which are primarily designed to optimize economic equity and efficiency. The technologies associated with digitization thus become very useful tools, facilitating public authorities to upgrade tax enforcement technology, better manage tax information and coherently develop more complex tax systems that can lead to better redistribution of revenues and achieve social objectives while achieving lower efficiency costs.

The policy implications that can be developed stem from the need to maintain or not in the future the positive taxation of capital income, defined to ensure tax fairness and to avoid as much as possible distortions in the economic distribution. Public policies could avoid similar taxation of capital and labour income respectively, but instead use separate and optimized rates for each, depending primarily on the specific redistributive burden. The creation of integrated tax frameworks at the national level that can include both

capital income and wealth simultaneously would reduce tax arbitrage and thus benefit economic stability. Digital technologies have the potential to support efficient tax collection, facilitating the monitoring of assets and simplifying the unification of tax regimes at a common rate. Moreover, the systematic use of a comprehensive tax system covering all income from the exploitation of capital can help to prevent current tax loopholes and inefficiencies and improve social redistribution.

Bibliography

Afield, W. E. (2020). *Moving tax disputes online without leaving taxpayer rights behind*. The Tax Lawyer, 74(1), 1–42.

Agrawal, D. R., & Fox, W. F. (2021). *Taxing goods and services in a digital era*. National Tax Journal, 74(1), 257–301.

Akerlof, G. A. (1978). *The economics of "tagging" as applied to the optimal income tax, welfare programs, and manpower planning*. American Economic Review, 68(1), 8–19.

Alm, J., Bloomquist, K., & McKee, M. (2020). *Tax compliance and tax morale*. Public Finance Review, 48(5), 602–630.

Auerbach, A. J., & Gale, W. G. (2022). *Tax policy design with low interest rates*. Tax Policy and the Economy, 36(1), 93–121.

Bellon, M., Dabla-Norris, E., Khalid, S., & Lima, F. (2022). *Digitalization to improve tax compliance: Evidence from VAT e-Invoicing in Peru*. Journal of Public Economics, 210, 104661.

Belmonte-Martin, I., Ortiz, L., & Polo, C. (2021). *Local tax management in Spain: A study of the conditional efficiency of provincial tax agencies*. Socio-Economic Planning Sciences, 78, 101057.

Blasco, J., Guillaud, E., & Zemmour, M. (2023). *The inequality impact of consumption taxes: An international comparison*. Journal of Public Economics, 222, 104897.

Boar, C., & Midrigan, V. (2022). *Efficient redistribution. Journal of Monetary Economics*, 131, 78–91.

Bronson, M. A., Haanwinckel, D., & Mazzocco, M. (2024). *Taxation and household decisions: An intertemporal analysis (Issue w32861)*. National Bureau of Economic Research.

Bunn, D., Asen, E., & Enache, C. (2020). *Digital taxation around the world*. Tax Foundation, 20(1), 1–45.

Chakraborty, G. (2020). *Evolving profiles of financial risk management in the era of digitization: The tomorrow that began in the past*. Journal of Public Affairs, 20(2), 2034.

Chari, V. V., Nicolini, J. P., & Teles, P. (2020). *Optimal capital taxation revisited*. Journal of Monetary Economics, 116, 147–165.

Clavey, C., Pemberton, J. L., Loeprick, J., & Verhoeven, M. (2019). *International tax reform, digitalization, and developing economies*. World Bank.

Coman Elena Liliana (2024), *Digitalization of accounting within the concept of cost management***,** Social Economic Debates, Volume 13, Issue1, https://www.economic-debates.ro/coman%20art1%202024.pdf

Dehnert, M., & Schumann, J. (2022). *Uncovering the digitalization impact on consumer decision-making for checking accounts in banking*. Electronic Markets, 32(3), 1503–1528.

Devereux, M. P., & Vella, J. (2018). *Taxing profit in a global economy*. European Economic Review, 117, 23–47.

Diamond, P., & Spinnewijn, J. (2011). *Capital income taxes with heterogeneous discount rates*. American Economic Journal: Economic Policy, 3(4), 52–76.

Evans, C., Taghizadeh-Hesary, F., Hendriyetty, N., & Kim, C. J. (2022). *Introduction: New frontiers for tax in the digital age*. In Taxation in the Digital Economy (pp. 1–18). Routledge.

Feldstein, M., & Wrobel, M. V. (2017). *Capital mobility and tax competition: Policies and implications*. Journal of Economic Perspectives, 31(4), 33–54.

Ferriere, A., Grübener, P., Navarro, G., & Vardishvili, O. (2023). *On the optimal design of transfers and income tax progressivity*. Journal of Political Economy Macroeconomics, 1(2), 276–333.

Fichtner, J., & Heemskerk, E. M. (2020). *The new permanent universal owners: Index funds, patient capital, and the distinction between feeble and forceful stewardship*. Economy and Society, 49(4), 493–515.

Fisher, R. C. (2022). State and local public finance. Routledge.

Fitzpatrick, K., & Thompson, J. P. (2010). *The interaction of metropolitan cost-of-living and the federal earned income tax credit: One size fits all?* National Tax Journal, 63(3), 419–445.

Gerritsen, A., Jacobs, B., Spiritus, K., & Rusu, A. V. (2024). *Optimal taxation of capital income with heterogeneous rates of return.* The Economic Journal.

Grinberg, I. (2012). *The battle over taxing offshore accounts*. UCLA Law Review, 60, 304.

Gupta, S., & Jalles, J. T. (2022). *Do tax reforms affect income distribution? Evidence from developing countries*. Economic Modelling, 110, 105804.

Hammond, P., Kwakwa, P. A., Berko, D., & Amissah, E. (2023). *Taxing informal sector through modified taxation: Implementation challenges and overcoming strategies*. Cogent Business & Management, 10(3), 2274172.

Hanappi, T., Jakubik, A., & Ruta, M. (2023). *Fiscal revenue mobilization and digitally traded products: Taxing at the border or behind it?* International Monetary Fund.

Junquera-Varela, R. F., & Lucas-Mas, C. Ó. (2024). *Revenue administration handbook*. World Bank Publications.

Keen, M., & Slemrod, J. (2021). *Rebellion, rascals, and revenue: Tax follies and wisdom through the ages.* Princeton University Press.

Kjoseva, E. N. (2021). *Taxation in era of globalization and digitalization: Issues and challenges on national tax sovereignty*. Iustinianus Primus Law Review, 12, 1.

Kwilinski, A., Vyshnevskyi, O., & Dzwigol, H. (2020). *Digitalization of the EU economies and people at risk of poverty or social exclusion.* Journal of Risk and Financial Management, 13(7), 142.

Larikaman, M., Salehi, M., & Yaghubi, N. M. (2024). *The impact of applying blockchain technology in the tax system: Opportunities and challenges.* Journal of Financial Reporting and Accounting.

Larrimore, J., Burkhauser, R. V., Auten, G., & Armour, P. (2021). *Recent trends in US income distributions in tax record data using more comprehensive measures of income including real accrued capital gains.* Journal of Political Economy, 129(5), 1319–1360.

Manski, C. F. (2014). *Identification of income–leisure preferences and evaluation of income tax policy.* Quantitative Economics, 5(1), 145–174.

Martínez, Y. U., Arzoz, P. P., & Arregui, I. Z. (2022). *Tax collection efficiency in OECD countries improves via decentralization, simplification, digitalization and education*. Journal of Policy Modeling, 44(2), 298–318.

Martínez-Vázquez, J., Sanz-Arcega, E., & Martín, J. M. T. (2023). *Tax revenue management and reform in the digital era in developing and developed countries.* In Research Handbook on Public Financial Management (pp. 202–225). Edward Elgar Publishing.

Mirrlees, J. A. (1971). *An exploration in the theory of optimum income taxation*. Review of Economic Studies, 38(2), 175–208.

Müller, J. M., Veile, J. W., & Voigt, K. I. (2020). *Prerequisites and incentives for digital information sharing in Industry 4.0 – An international comparison across data types*. Computers & Industrial Engineering, 148, 106733.

Nakayama, K., Perry, V., & Klemm, A. (2021). *Residence-based taxation: Is there a way forward?* In Corporate Income Taxes Under Pressure (pp. 253–264).

Nallareddy, S., Rouen, E., & Serrato, J. C. S. (2022). *Do corporate tax cuts increase income inequality?* Tax Policy and the Economy, 36(1), 35–91.

Olbert, M., & Spengel, C. (2019). *Taxation in the digital economy – Recent policy developments and the question of value creation*. International Tax Studies, 2.

Organisation for Economic Co-operation and Development. (2014). OECD Publishing. https://www.oecd.org/tax/automatic-exchange.

Radu Florin, (2025). *Financial and accounting security and control of entities in the context of the necessity for digitalization*, Social Economic Debates, Volume 14, Issue 1, https://www.economic-debates.ro/Art%201%20Neagu_Preda_Radu%20DSE%201%202025.pdf.

Ranchordas, S., & Scarcella, L. (2021). *Automated government for vulnerable citizens: Intermediating rights.* William & Mary Bill of Rights Journal, 30, 373.

Revesz, J. (2020*). A model of the optimal tax mix including capital taxation*. Atlantic Economic Journal, 48(3), 387–402.

Rogoff, K. (2020). *The curse of cash*. Princeton University Press.

Rubolino, E., & Waldenström, D. (2020). *Tax progressivity and top incomes: Evidence from tax reforms.* The Journal of Economic Inequality, 18, 261–289.

Scheuer, F., & Slemrod, J. (2021*). Taxing our wealth*. Journal of Economic Perspectives, 35(1), 207–230.

Simonofski, A., Tombal, T., Terwangne, C., Willem, P., Frenay, B., & Janssen, M. (2022). *Balancing fraud analytics with legal requirements: Governance practices and trade-offs in public administrations*. Data & Policy, 4, 14.

Slemrod, J. (2019). *Tax systems*. MIT Press.

Torgler, B., & Murphy, K. (2019). *Tax morale and tax compliance: A cross-country examination.* European Journal of Political Economy, 59, 221–238.

Tsindeliani, I., Matyanova, E., Razgildeev, A., Vasilyeva, E., Dudnik, D., & Mikhailova, A. (2021). *Tax optimization in the modern tax system under the influence of digitalization: Russian case study*. European Journal of Comparative Law and Governance, 8(4), 429–452.

Turina, A. (2020). *The progressive policy shift in the debate on the international tax challenges of the digital economy: A "pretext" for overhaul of the international tax regime?* Computer Law & Security Review, 36, 105382.

Walker, D. I. (2022). *Tax complexity and technology*. Indiana Law Journal, 97, 1095.

Xiao, C., & Shao, Y. (2020a). *Information system and corporate income tax enforcement: Evidence from China*. Journal of Accounting and Public Policy, 39(6), 106772.

Xu, J., She, S., & Liu, W. (2022). *Role of digitalization in environment, social and governance, and sustainability: Review-based study for implications*. Frontiers in Psychology, 13, 961057.

Zucman, G. (2015). *The hidden wealth of nations: The scourge of tax havens*. University of Chicago Press.