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A THEORETICAL ANALYSIS OF THE NEW POLISH INCOME TAX SYSTEM

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J E L Classification: H22, H25.

Abstract: The research objective of this article is to present changes incorporated into the Polish income tax system and their potential influence on entrepreneurs' behaviour. One of the most important features of the income taxation system for Polish entrepreneurs is that they can choose the rules of taxation. Under certain conditions, they can apply a progressive scale tax, a flat tax, or a revenue-based tax. The changes introduced in the year 2022 mean that for many entrepreneurs, the burden of taxation has increased. The theoretical and model analysis presented in this article revealed that for many of them, the revenue-based tax has become (or always has been) the optimal form of taxation. The analysis also indicates a serious problem with this form of taxation in the context of equity. This study may provide a basis for further research on the impact of tax perturbations on business activity, business structure, and costs of compliance.

Introduction

Taxation is one of the great legal, scientific, and political subjects – and income taxation is an extremely sensitive one. Scientists are looking for an optimal tax

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system in the framework of theoretical and empirical analyses. Since the 1970s, the scientific discussion about optimal taxation has been rife.[1] The main dilemmas were optimal tax revenues and the optimal structure of the tax system, and in particular questions:

- should there be direct or indirect taxation dominance?[2]
- should there be lump-sum or distortionary taxes dominance?[3]
- should there be progressive or flat taxation dominance?[4]

Around these topics, there is a discussion about finding the right balance between equity[5] and efficiency. Income taxation raises particularly complex issues, as it affects individual's net earnings, savings, work, and attitudes.[6]

Politicians, on the other hand, are searching for an optimal tax system by introducing constant changes to existing solutions. It should be emphasised here that these two groups do not necessarily define the optimal tax system in the same way. Nevertheless, any significant tax reform can be the basis for research on taxation, taxpayer behaviour, and tax system fairness. Many scientists use those politics-driven tax reforms to address in a theoretical framework the effects of small commodity tax reforms, often called tax perturbations.[7]

The aim of this article is to present changes incorporated into the Polish income tax system and their potential influence on entrepreneurs' behaviour. One of the most important features of the income taxation system for Polish entrepreneurs is that they can choose the rules of taxation. Under certain conditions, they can apply a progressive scale tax, a flat tax, or a tax on recorded revenue without deductible costs.[8] The changes introduced in the year 2022 mean that for many entrepreneurs the burden of taxation under the 'standard' forms of taxation, i.e., progressive and flat, has increased. This provides an opportunity to analyse the taxpayer's potential behaviour in the context of choosing

[1] See more: (Sandmo, 1976).

[2] See more: (Atkinson and Stiglitz, 1976).

[3] See more: (Joseph, 1939), (Hicks, 1939), (Peacock and Berry, 1951), (Stigler, 1987), (Torregrosa-Montaner, 2015).

[4] See more: (Diamond and Mirrlees, 1971), (Conesa and Krueger, 2006).

[5] See more: (Jakobsson, 1976), (Kakwani and Lambert, 1998).

[6] See more: (Tschinkl, Weikert & Kiesewetter, 2021).

[7] See more: (Feldstein, 1976), (Diewert, 1978).

[8] This tax is usually referred to as "lump sum tax"; however, that name does not correspond with it's nature. Therefore, this article will use the shorter name 'revenue-based tax'.

the optimal form of taxation. Those choices are particularly interesting due to the fact that most probably a large part of entrepreneurs changed their chosen taxing rules from income-based tax rules (progressive tax and flat tax) to revenue-based tax rules. The analysed shift in the income taxation system may also form a basis for considerations on the fairness of the old and new tax systems.

Research methodology and research process

The Polish system of income taxation has been changing ever since its introduction in 1992, just as other tax systems have. However, recent changes (called the 'Polish Deal'[9]) are crucial, as they change not only the income tax burden, but also the whole structure of taxation on business activity income – potentially affecting the equity of taxation, taxpayer behaviour, and costs of compliance or optimisation. Therefore, only the fundamental elements of the income taxation system in 2021 and 2022 (two versions[10]) will be explained. Further analysis concerns only the taxation of income generated by individuals running business activities (as sole traders or as partners in partnerships).

In 2021 and 2022, there were four possible ways of taxing business activity income generated by individuals (entrepreneurs) in Poland: tax scale (which means progressive tax scale), 'flat tax' – tax scale with one rate of 19%, revenue-based tax, or the so-called 'tax card'.[11] The self-employed could choose between those four forms of taxation; however, all forms other than the tax scale were subject to certain conditions.

Taxation under the progressive tax scale in 2021 was based on income; however, the taxable income was calculated by deducting some expenditures from income (deductions on income) – the most important were social security contributions to the Social Insurance Institution (old-age pension fund, disabili-

[9] Jan Frąszczak provides the history and unusual circumstances of introducing the tax changes called the 'Polish Deal' (Frąszczak, 2022). Other perspective on that process gives (Sawulski et. al., 2023).

[10] There were two versions of the Polish income taxation system in 2022, as vital changes were introduced into that system before and during 2022. Those two versions of the tax system will be called Polish Deal 1.0 and Polish Deal 2.0 – as they are known in Polish press.

[11] The 'tax card' is an interesting lump-sum form of taxation – however, since 2022, access to this form of taxation has been limited to those who used it in 2021, so with time it will disappear altogether.

ty pension fund, sickness insurance fund, and work accident insurance fund). Those contributions – apart from some exceptions – were calculated on a fixed basis and amounted to PLN 11,974.37 per year for an entrepreneur.

The tax scale provided a basic rate of 17% which was applied to taxable income to the limit of PLN 85,528. Above that limit, a higher rate of 32% was applied – but only to the excess tax base (taxable income). Tax amount calculation rules are presented in table 1. It must be noted that in 2021, the scale also provided for a tax-decreasing amount that was dependent on the income. Details on that amount are presented in table 2.

One type of tax reliefs in 2021 consisted in a deduction of a set amount (or part of the expenses) from the calculated amount of tax. Compulsory health insurance was a very important example of such tax relief. Health insurance was calculated as 9% of a fixed basis[12] (in 2021 it was PLN 4562.25 annually), but the deduction was 7.75% of that basis (in 2021 it was PLN 3928.60 annually). As a result, health insurance was not a particularly important economic burden.

As mentioned before, significant changes were introduced to progressive taxation in 2022. The first important shift was the scale – a new threshold for applying a higher tax rate. Another new solution was a new tax-decreasing amount that was not dependent on income. Those changes are presented in table 3.

Table 1. Tax amount calculation rules in Poland – progressive tax scale in 2021

Annual taxable income		Tax amount calculation rules
over	up to	
	PLN 85,528	17% of the tax base less the tax-decreasing amount
PLN 85,528		PLN 14,539.76 + 32% of excess tax base above PLN 85,528

Source: Act of 26 July 1991 on personal income tax (consolidated text: Journal of Laws, 2021, No. 1128 as amended).

[12] That basis is 75% of average monthly earnings in national economy.

Table 2. Tax-decreasing amount in Poland – progressive tax scale in 2021

Annual taxable income		Annual tax-decreasing amount
over	up to	
	PLN 8,000	PLN 1,360
PLN 8,000	PLN 13,000	PLN 1,360– [PLN 834.88 x (taxable income – PLN 8,000) : PLN 5,000]
PLN 13,000	PLN 85,528	PLN 525.12
PLN 85,528	PLN 127,000	PLN 525.12– [PLN 525.12 x (taxable income – PLN 85,528): PLN 41,472]
PLN 127,000		PLN 0

Source: Act of 26 July 1991 on personal income tax (consolidated text: Journal of Laws, 2021, No. 1128 as amended).

The year 2022 also brought another modification in the Polish tax system. The base for calculating health insurance imposed on entrepreneurs was altered – it was to be computed on the basis of income. To balance that, a new income tax deduction was introduced – the 'middle-class deduction', decreasing taxable income. Details on the respective amounts are demonstrated in table 4.

Table 3. Tax amount calculation rules in Poland – progressive tax scale in 2022, first version (Polish Deal 1.0)

Annual taxable income		Tax amount calculation rules
over	Up to	
	PLN 120,000	17% of taxable income less the tax-decreasing amount (set amount PLN 5,100)
PLN 120,000		PLN 15,300 + 32% of excess tax base above PLN 120,000

Source: Act of 26 July 1991 on personal income tax (consolidated text: Journal of Laws, 2021, No. 1128 as amended).

Table 4. Income tax 'middle-class deduction' calculation rules in Poland – progressive tax scale in 2022, first version (Polish Deal 1.0)

Annual income	'Middle-class' tax deduction calculation rules
over PLN 68,412 and up to PLN 102,588	(income x 6.68% - PLN 4,566)/0.17
over PLN 102,588 and up to PLN 133,692	(income x (-7.35%) + PLN 9,829)/0.17

Source: own elaboration on the basis of: Act of 26 July 1991 on personal income tax (consolidated text: Journal of Laws, 2021, No. 1128 as amended).

The described reform proved to be a failure as soon as tax year 2022 began. In order to avoid a PR disaster, politicians decided to mitigate the problem and promised further modifications to the income taxation system. Those changes took place in the middle of the year – legal solutions were introduced from 1 July 2022, but some of them were effective as of 1 January 2022 (Frąszczak, 2022). The most important adjustment was the new tax scale – presented in table 5. The second important modification was a removal of 'the middle-class deduction' from the legal system (Guziejewska & Witczak, 2022).

Table 5. Tax amount calculation rules in Poland – progressive tax scale in 2022, second version (Polish Deal 2.0)

Annual taxable income		Tax amount calculation rules
over	up to	
	PLN 120,000	12% of the tax base less the tax-decreasing amount (fixed amount of PLN 3,600)
PLN 120,000		PLN 10,800 + 32% of excess tax base above PLN 120,000

Source: Act of 26 July 1991 on personal income tax (consolidated text: Journal of Laws, 2021, No. 1128 as amended).

Another form of taxation available for entrepreneurs is flat tax. The tax rate has not been changed ever since the introduction – it is 19% of taxable income. In that system, there are also some deductions, albeit limited in comparison to tax incentives accessible in the progressive scale tax system. In 2021, there were two main deductions – social security contributions were deductible from the tax base, and health insurance (part of it, 7.75% of the calculation base) was deductible from the charged amount of tax. Those contributions were to be calculated basing on fixed amounts, similarly to the progressive tax scale.

The main change in the flat tax introduced by Polish Deal 1.0 in the year 2022 was the removal of the possibility to deduct health insurance from the tax amount. Moreover, that insurance was to be computed on the basis of income and not a fixed amount as had previously been done. To make this switch less controversial, the rate of the health insurance was changed to 4.9%, should the entrepreneur choose the flat tax.

The only element modified in the flat tax by Polish Deal 2.0 was that the deductibility of health insurance returned – but on different conditions. When using that taxation form, health insurance paid can be deducted, but from taxable income (not from charged tax, as it used to be) and with a fixed cap – the deduction cannot exceed the amount of PLN 8,700.

Another form of taxation that can be chosen by Polish entrepreneurs is the tax on recorded revenue without deductible costs. The proposed name reflects the nature of this tax – the tax base is revenue, no deduction of costs is allowed. This option has always been limited to selected entities – one of the most important conditions was not to exceed EUR 250,000 of revenue in the previous tax year.[13] In 2021, that limit was raised to EUR 2,000,000[14] in the tax year, which made that form of taxation significantly more accessible and popular.

The tax on recorded revenue has many rates, each dedicated to a specific type of business activity. In 2021, there were eight rates: 17%, 15%, 12.5%, 10%, 8.5%, 5.5%, 3% and 2%. In 2022, two more rates were added: 14% and 12%. The main challenge for taxpayers under this form of taxation is the correct choice of the type of activity and the rate assigned to it.

Entrepreneurs using the tax on recorded revenue without deductible costs have had the right to some deductions. In 2021, there were two main reliefs – social security contributions were deductible from the tax base (revenue), and health insurance (part of it, 7.75% of the calculation base) was deductible from the charged amount of tax. Those contributions were to be calculated basing on fixed amounts, similarly to the progressive tax scale.

Polish Deal 1.0 also brought a shift in that form of taxation. The base for calculating health insurance imposed on entrepreneurs was altered; however, in this case it was not to be computed on the basis of income, but several

[13] in 2020 it was PLN 1,093,350.

[14] in 2021 it was PLN 9,030,600, in 2022 PLN 9,188,200.

lump sums of health insurance were provided. Their value depended on the value of the revenue. Taxpayers were divided according to their annual revenue. For those generating annual revenue from PLN 60,000 up to PLN 300,000, the monthly insurance was based on fixed amount.[15] The base was lower for those that generated smaller revenue, and higher for those with higher revenue (Guziejewska & Witczak, 2022). Details are presented in table 6.

The first version of Polish Deal did not allow taxpayers to deduct health insurance. However, the second version of reform gave that possibility. When using that taxation form, health insurance paid can be deducted, but from taxable income (not from charged tax, as it used to be) and the reduction value cannot exceed 50% of health insurance paid.

Outcome of the research process and conclusions

Model specification, analysis and results

On the basis of the theoretical analysis, taxation models for entrepreneurs in Poland in the years 2021 and 2022 were build. The aim was to present the difference in the tax burden in 2021 and in 2022, i.e., the fiscal effect of tax perturbation. To achieve this, the tax burden and other connected burdens were calculated for every level of income.

Table 6. Health insurance calculation rules in Poland – tax on recorded revenue without deductible costs in 2022

Revenue	Health insurance base (monthly)	Health insurance (monthly)	Health insurance (annually)
below PLN 60,000	PLN 6,221.04 x 60%	PLN 6,221.04 x 60% x 9% = PLN 335.94	PLN 4,031.28
from PLN 60,000 up to PLN 300,000	PLN 6,221.04	PLN 6,221.04 x 9% = PLN 559.89	PLN 6,718.68
over PLN 300,000	PLN 6,221.04 x 180%	PLN 6,221.04 x 180% x 9% = PLN 1,007.81	PLN 12,093.72

Source: own elaboration on the basis of: Act of 26 July 1991 on personal income tax (consolidated text: Journal of Laws, 2021, No. 1128 as amended).

[15] The base is the average monthly salary in the enterprise sector in the fourth quarter of 2021, which amounted to PLN 6,221.04.

In order to maintain the transparency of the argument, the author only presented the values allowing for the comparison of fiscal charges over time, i.e., tax and health insurance. Social security contributions are the same under different tax regimes, thus there was no need to include them in this analysis.

The presented models have some simplifications – the forth form of taxation, 'tax card' was not analysed, and neither was solidarity tribute. What is more, some assumptions concerning tax on recorded revenue without deductible costs had to be made – as this taxation form has a different tax base from other analysed forms. Therefore, to maintain the comparability of different taxing options, in figure 1 and figure 2 revenue was calculated as 150% of income, and the 8,5% rate of revenue-based taxation was chosen. A more detailed analysis of the various versions of the margin and rates and their impact on revenue-based taxation will be presented on the basis of figure 3.

Figure 1 shows tax burdens (with the health insurance burden), depending on the income and the chosen form of taxation. The analysis of flat tax changes is quite simple – for income over PLN 24,000 the tax system introduced in 2022 is less favourable than the one in force in 2021. It must be noted, that the 'correction' of the system in Polish Deal 2.0 created slightly less burdensome taxation.

In the case of revenue-based tax (under the assumptions provided above), the Polish Deal increased the tax burden for entrepreneurs earning more than PLN 16,000. It should be noted that changes introduced by Polish Deal 2.0 made that burden somewhat lower.

The most complicated changes were introduced in the progressive scale. These are presented in the first part of figure 1. The Polish Deal decreased the amount of tax and health insurance for low incomes. The first version of changes, introduced as Polish Deal 1.0, made the tax burden higher in comparison to 2021 for income above PLN 140,000. The second version of changes, introduced as Polish Deal 2.0, made the tax burden higher in comparison to 2021 for income above PLN 190,000.

Figure 2 presents the tax burden under different income and different tax regimes in 2021, and 2022 (Polish Deal 1.0 and 2.0). Under the assumptions that revenue is 150% of income and the tax rate for revenue-based tax is 8,5%, the following conclusions can be drawn:

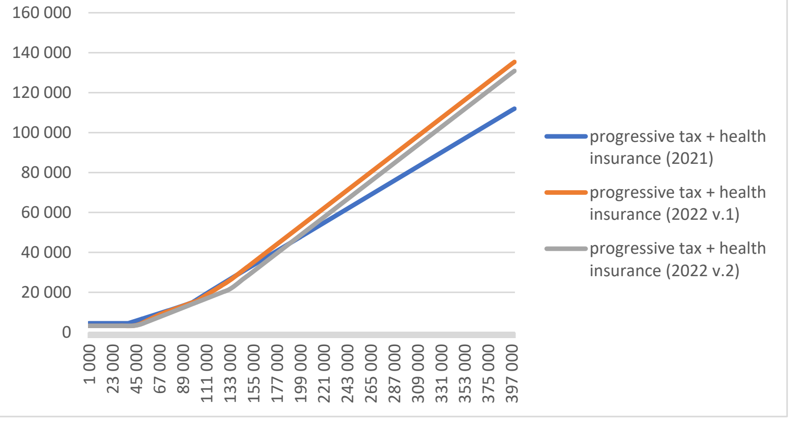
- in every tax regime, there are different equalisation points, i.e., points (values of income) in which the optimal taxation form is changing,

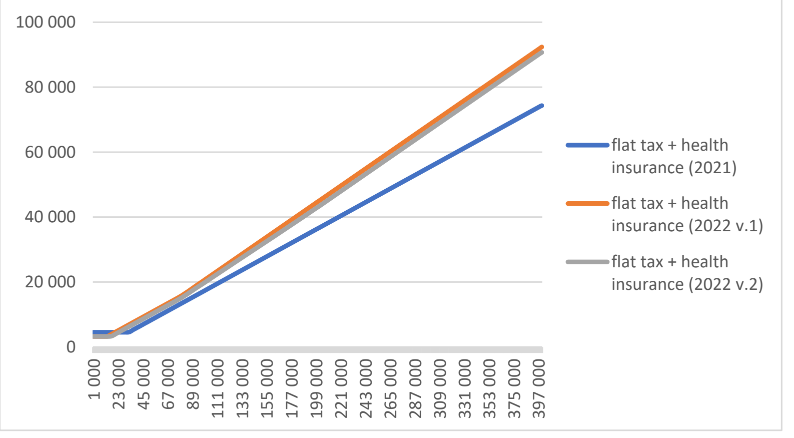
- there are cases in which only one tax regime is favourable regardless of the income – one example is 2021 in Figure 2, where revenue-related tax brings the lowest burden.
- in 2022, there were only two optimal forms of taxation – progressive scale tax and revenue-based tax, choosing flat tax would not be optimal.

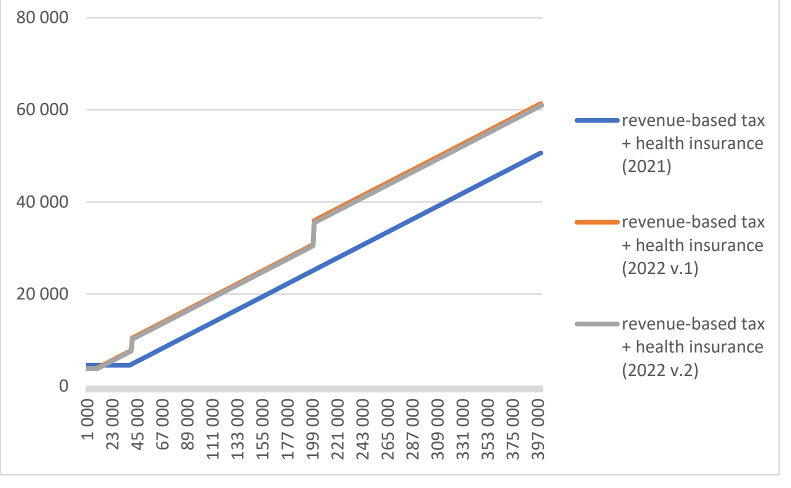
The equalisation points (income) for progressive scale and flat tax changed between examined periods, but they remained constant under given tax legislation. As mentioned before, when analysing revenue-based tax, some assumptions as to the relation between income and revenue have to be made, as the tax base is different. To present how these assumptions determine the resulting tax, figure 3 was prepared. It shows the same considerations on the optimal form of taxation, but with an assumption that revenue is 300% of income (we assume that there are much higher costs in the analysed business). It does not change the calculations on progressive tax and flat tax. However, under such circumstances, the following conclusions can be drawn:

- in every tax regime, there are different equalisation points, i.e., points (values of income) in which the optimal taxation form is changing,
- only two forms of taxation are optimal – progressive taxation for lower income, and flat tax for higher income; the equalisation point, as mentioned, depends on the analysed period.

Figure 1. Tax burden depending on income and the chosen form of taxation in the years

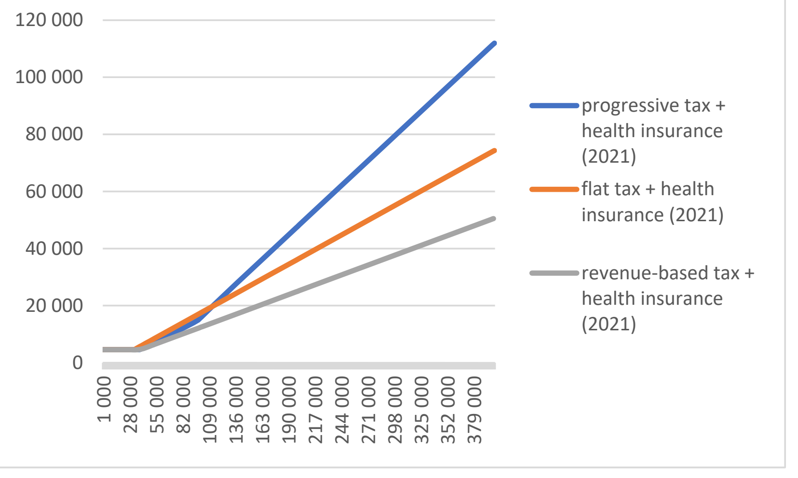


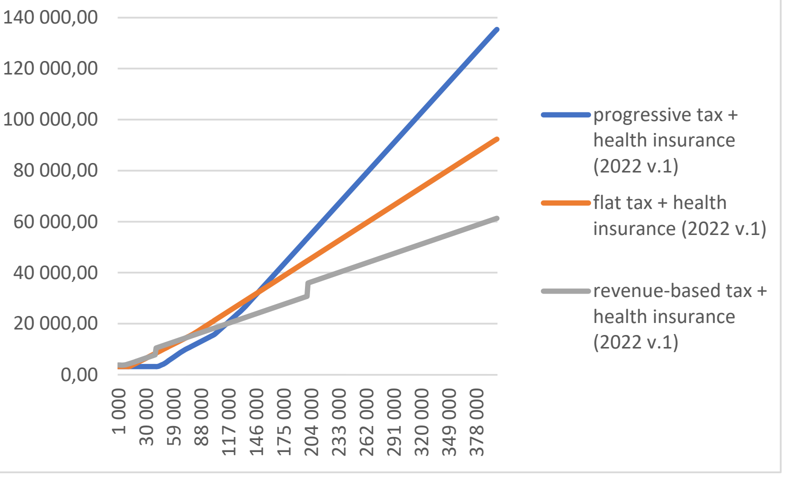


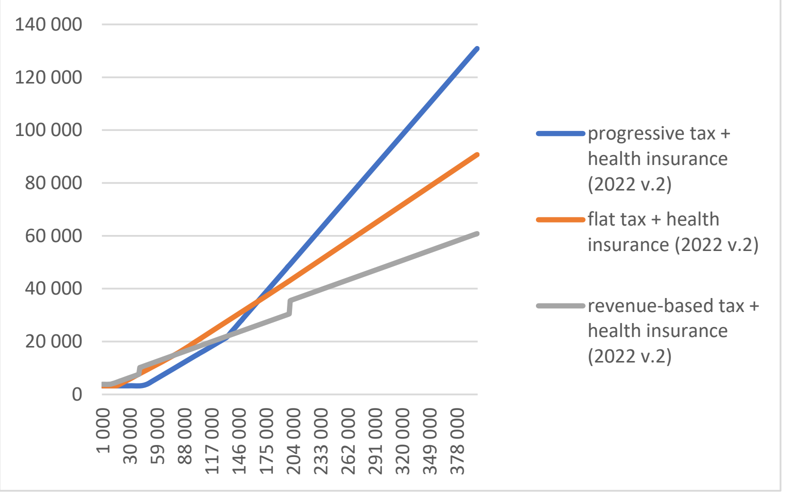


Source: own elaboration.

Figure 2. Tax burden depending on income – optimisation dilemma in 2021, 2022 v.1 (Polish Deal 1.0) and 2022 v.2 (Polish Deal 2.0) – under given assumption (revenue = 150%*income, tax rate of revenue-based tax = 8.5%)

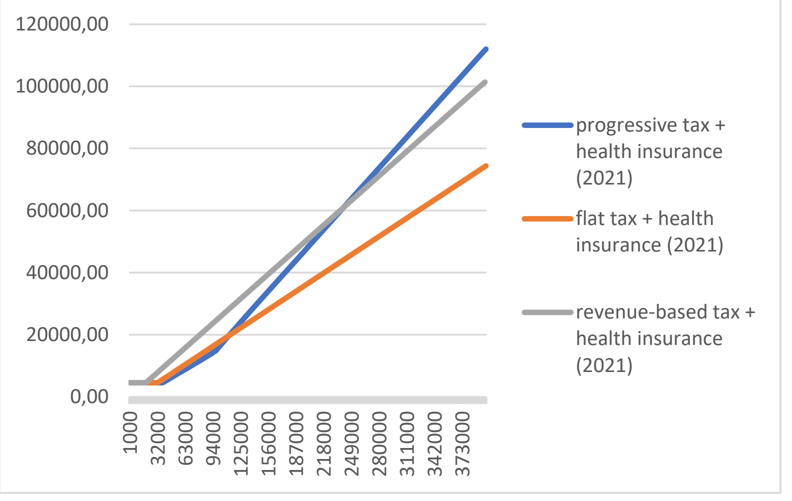


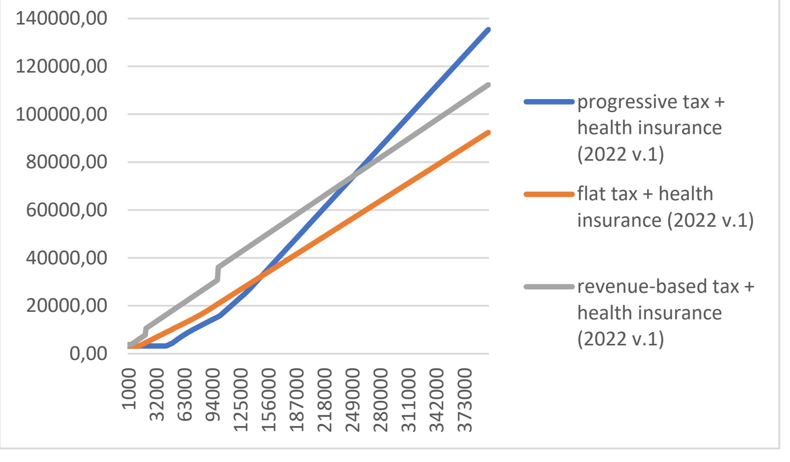


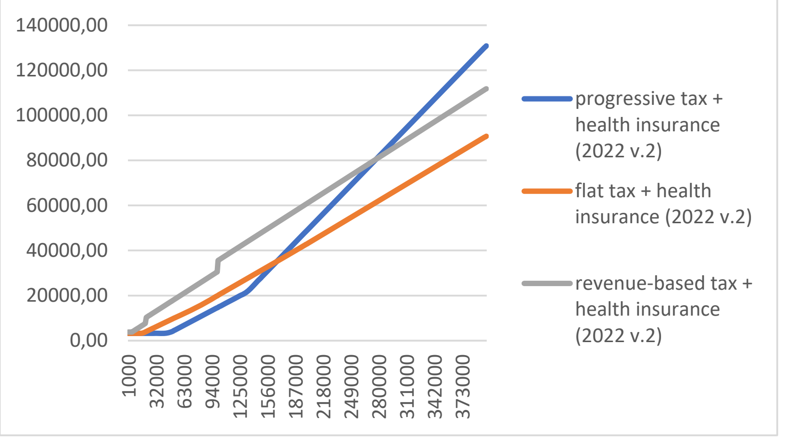


S o u r c e : own elaboration.

Figure 3. Tax burden depending on income – optimisation dilemma in 2021, 2022 v.1 (Polish Deal 1.0) and 2022 v.2 (Polish Deal 2.0) – under given assumption (revenue = 300%*income, tax rate of revenue-based tax = 8.5%)







Source: own elaboration.

Discussion and conclusion

Changes introduced to the Polish tax system in 2022 made the burden under flat tax and revenue-based tax higher for most of the taxpayers.[16] The change in burden under progressive taxation depends on the income and cannot be easily summarised. That may give an impression that flat tax and revenue-based tax become less attractive to most taxpayers in 2022. To prove that it is a misconception, the author provided a model of tax burden depending on income. The optimal form of taxation in every examined period depended on:

- income (or revenue, the relationship between those two indicators),
- the tax rate for revenue-based tax (determined by the type of business activity).

Therefore, all three forms of taxation will still be used, as every entrepreneur has their needs, plans and circumstances, such as generated margin. However, it can be suspected that more taxpayers will decide to use the progressive tax scale. Those who generate higher income will consider flat tax or revenue-based tax.

An urging issue that seems worth examining in the context of Polish perturbations is the fairness of taxation in its current form. The presented model sug-

[16] There are exceptions to this general rule, for example related to the reduction of the revenue-based tax rate for selected professional groups.

gests that – in the conditions where other options yield a higher burden – many entrepreneurs have decided and will decide to use revenue-based tax. However, the difference in taxation of the same amount of income (generated by different revenue, as in figure 2 and figure 3) seems to be highly unfair. It used to be accepted when revenue-based tax was a rarely used form of taxation. In the face of changes introduced by the Polish Deal, it seems necessary to subject this form of taxation to an in-depth analysis and consider some modification.

Another issue that should be examined is tax risk generated by tax perturbations and the costs of adjusting to them. The recent Polish reform seems a good example of a potentially high risk and high costs due to differences between calculated burden under different taxation regimes, differences between periods (perturbations in every tax year) and the complexity of tax law.

References

Act of 26 July 1991 on personal income tax (consolidated text: Journal of Laws, 2021, No. 1128 as amended).

Atkinson, A.B., & Stiglitz, J.E. (1976). The design of tax structure: Direct versus indirect taxation. *Journal of Public Economics*, 6(1–2), 55–75. https://doi.org/10.1016/0047-2727(76)90041-4.

Conesa, J.C., & Krueger, D. (2006). On the optimal progressivity of the income tax code. *Journal of Monetary Economics*, 53(7), 1425–1450. https://doi.org/10.3386/w11044.

Diamond, P., & Mirrlees, J.A. (1971). Optimal Taxation and Public Production, *American Economic Review* 61, 8–27 and 261–278.

Diewert, W.E. (1978). Optimal tax perturbations. *Journal of Public Economics*, 10(2), 139–177. https://doi.org/10.1016/0047-2727(78)90034-8.

Feldstein, M. (1976). On the theory of tax reform. *Journal of Public Economics*, 6(1–2), 77–104.

Frąszczak, J. (2022). Method of Management of Personal Income Tax Changes Implemented by the Polish Deal*. European Research Studies Journal,* 25(3), 145–155, DOI: 10.35808/ersj/3026

Guziejewska, B., & Witczak, I. (2022). The Polish Deal's changes to the tax system versus the compatibility of fiscal policy goals. *Optimum. Economic Studies,* (2 (108)), 95–109. https://doi.org/10.15290/oes.2022.02.108.07.

Hicks, J.R. (1939). The Foundations of Welfare Economics. *The Economic Journal*, 49, 696–712. http://dx.doi.org/10.2307/2225023.

Jakobsson, U. (1976). On the measurement of the degree of progression. *Journal of Public Economics*, 5(1–2), 161–168. https://doi.org/10.1016/0047-2727(76)90066-9.

Joseph, M.F.W. (1939). The excess burden of indirect taxation. *Review of Economic Studies,* 6, 226–231.

Kakwani, N., & Lambert, P.J. (1998). On measuring inequity in taxation: a new approach. *European Journal of Political Economy*, 14(2), 369–380. https://doi.org/10.1016/S0176-2680(98)00012-3.

Peacock, T., & Berry, D. (1951), A Note on the Theory of Income Distribution. *Economica*, 28, 83–90.

Sandmo, A. (1976). Optimal taxation: An introduction to the literature. *Journal of Public Economics*, 6(1–2), 37–54. https://doi.org/10.1016/0047-2727(76)90040-2.

Sawulski, J., Szewczyk, N., Rafalska, K., & Smółko, M. (2023). Business power against redistribution: The case of watered-down tax reform in Poland. *Business and Politics*, 1–19. https://doi.org/10.1017/bap.2023.3.

Stigler, G.J. (1987). *The Theory of Price*, New York: Macmillan.

Torregrosa-Montaner, R.J. (2015). Lump-sum over Distortionary Taxation Dominance with Heterogeneous Individuals. *Economics Bulletin*, 35(3), 1443–1449.

Tschinkl, D., Weikert, N., & Kiesewetter, D. (2021). The Impact of Taxes on Individual Long-Term Savings Decision. *Copernican Journal of Finance & Accounting*, 10(4), 159–179. http://dx.doi.org/10.12775/CJFA.2021.020.