

Received: May 2023
Accepted: March 2024

DOI: 10.7862/rz.2024.mmr.01
CC-BY 4.0

Ewelina AUGUSTYNOWICZ¹

IS THE TAX WEDGE IN POLAND NON-LINEAR?

The article attempts to answer the question posed in the title – is the tax wedge in Poland non-linear? The aim of the article is to present changes in the size of the tax wedge with the increase in gross pay, and to examine whether there is a pay threshold beyond which the size of the tax wedge decreases. In the course of the research, the impact of gross pay on the size of the tax wedge was compared. The study also attempts to indicate the gross pay, beyond which the size of the tax wedge increases again.

A hypothesis was formulated that there is a pay threshold beyond which the tax wedge loses its linear character. The comparative analysis of the size of the tax wedge was carried out on twenty-three variants of gross pay. The results show that after exceeding the gross pay of PLN 20,100, the tax wedge loses its linear character.

Keywords: tax wedge, gross pay, cost-per-hire.

1. INTRODUCTION

Employment and the related remuneration can be considered on three levels: from the employer's perspective, the key aspect is the total cost of employing an employee, i.e. gross pay with mandatory markups; from the employee's perspective, the most important is the net pay, i.e. the amount the employee will receive from the employer, usually to a bank account; on the other hand, from the state's perspective, the significant amount is the total budget contribution, i.e. the collision of the perspectives of the employer and the employee. This value, which is the sum of taxes and contributions paid by the employee and the employer, is called the tax wedge (Szaban, 2016). Thus, the tax wedge is the difference between the total cost of employing an employee and the net pay that the employee receives (Polarczyk, 2007). Although the name suggests that it is the sum of tax burdens, it takes into account all burdens, in particular contributions. In Poland, the term “tax and contribution wedge” may be used, however, it is a colloquial term. In this study, the tax wedge is understood as the total burden of all levies, in particular taxes and contributions. In comparative analyses, the tax wedge is presented as its percentage share in the total cost of employment (Polarczyk 2008). The size of the tax wedge affects decisions regarding the employment of employees; employers indicate employment costs as the biggest barrier to running a business in Poland (ZPP, 2020). Although the tax wedge is progressive (Wojciuk,

¹ Ewelina Augustynowicz, Kazimierz Wielki University in Bydgoszcz, Poland: e-mail: ewelina.augustynowicz@ukw.edu.pl. ORCID: 0000-0002-3692-4382.

Dziemianowicz, 2017), there are legal solutions in the Polish tax system that may cause a decrease in the tax wedge despite an increase in remuneration.

The aim of the article is therefore to present changes in the size of the tax wedge with an increase in gross pays and to examine whether there is a pay threshold beyond which the tax wedge decreases. The study will also attempt to indicate the gross pay, beyond which the size of the tax wedge increases again. A hypothesis was formulated that there is a salary threshold beyond which the tax wedge loses its linear character.

The established research objective required the use of the following research methods: critical analysis of the literature and legal acts, as well as a comparative analysis. The article has been divided into two parts. In the first, on the basis of the literature on the subject and legal acts, the factors shaping the tax wedge were characterized. The second part presents the results of a comparative analysis of the size of the tax wedge, depending on the gross pay.

2. FACTORS SHAPING THE TAX WEDGE

The size of the tax wedge is influenced in particular by taxes and contributions paid on employees' salaries; some of them are financed by the employer, and some are taken from the employee's salary. The type of individual contributions, their amount and share in their financing by the parties to the employment relationship is presented in table 1. The basis on which the so-called social contributions (retirement, disability, sickness and accident) and contributions to special-purpose funds (employment fund and solidarity fund) are calculated is the gross pay. On the other hand, the basis for the health contribution is the gross pay net of social contributions.

Table 1. Amount of respective contributions

Contribution type	Financed by the employee	Financed by the employer
Retirement	9.76%	9.76%
Disability	1.5%	6.5%
Accident	-	1.67% ²
Sickness	2.45%	-
Health	9%	-
Employment fund and solidarity fund	-	2.45%

Source: Own elaboration on the basis of Act of 13.10.1998 on social insurance system (i.e. Journal of Laws of 2022, item 1009 as amended); Act of 27.08.2004 on health care services financed from public funds (i.e. Journal of Laws of 2022, item 64 as amended); Act of 13.07.2006 on the protection of employee claims in the event of the employer's insolvency (i.e. Journal of Laws of 2020, item 7 as amended); Act of 20.04.2004 r. on employment promotion and labor market institutions (i.e. Journal of Laws of 2022, item 690 as amended).

² The percentage rate of the accident contribution is not fixed and depends on several factors, in the case of entrepreneurs employing less than 10 employees, it is 50% of the highest interest rate set for a given contribution year for activity groups. From April 1, 2021, it is 1.67% (50% of the highest premium – 3.33% for service activities supporting mining and quarrying) in accordance with the Regulation of the Ministry of Family and Social Policy of 16.03.2021 amending the regulation on differentiation of the rate percentage social security contribution for accidents at work and occupational diseases, depending on occupational hazards and their effects (Journal of Laws of 2021, item 489).

Income tax is another category, after contributions, which strongly influences the size of the tax wedge. In Poland, taxation of individuals is progressive, which means that the income tax burden increases with the increase in income (Deresz, Podstawka, 2017). Since 2009, the Polish tax system has provided for two tax thresholds. In 2023, for the tax base³ not exceeding PLN 120,000, the income tax is 12%, after exceeding this limit, the tax rate increases to 32% (Act, 1991, Article 27 section 1). Only the surplus above PLN 120,000 is taxed at the rate of 32%. Depending on the gross pay, the share of the tax wedge in the cost of employment increases. Basically, the tax wedge is progressive, which results from the fact that there are solutions in Poland that increase taxation along with the increase in income. These solutions are the presence of the second tax threshold and the solidarity levy. In addition, the tax-free amount affects the progressivity of the income tax. The aforementioned solidarity levy is de facto an additional tax burden on the basis of the third tax threshold functioning before 2009 (Kijanka, Kowalska-Musiał, 2020). The amount of tax under the solidarity levy is 4%, and the taxable amount is the surplus over PLN 1,000,000 of the tax base (Act, 1991, Article 30h, paragraphs 1 and 2). On the other hand, the free amount reduces the tax value. Taxpayers whose annual income does not exceed PLN 30,000 do not pay income tax. However, for other taxpayers, the amount of PLN 30,000 is also tax-free, due to the amount reducing the tax (Act, 1991, Article 27(1)). If the employee submits the PIT-2 statement to the employer, his monthly income tax advance may be reduced by 1/12 of the free amount. Failure to submit the PIT-2 declaration does not mean the loss of the exemption, the free amount will be settled in the annual tax return. Thanks to this construction of the regulations, the tax wedge increases with the increase in income and is of a progressive nature. However, in Poland there is a certain paradox, due to which the tax wedge may, contrary to appearances, lose its linear character. It is a provision specifying the maximum annual basis for the calculation of contributions for retirement and disability insurance.

The retirement insurance contribution, also called the old age risk insurance (Szczepański, 2014), is charged to both parties of the employment relationship in the amount of 9.76%. The total burden of the retirement contribution is therefore 19.52%. Adding to this the total amount of the disability contribution (1.5% for the employee and 6.5% for the employer), the total amount of the old age risk contribution and the disability contribution amounts to 27.52%. And although retirement and disability contributions are intended, after reaching the retirement age or in connection with incapacity for further work, to ensure the maintenance of a standard of living similar to that during the period of professional activity (Golinowska, 2014), the Polish retirement and disability system allows for it only up to a certain level. The Act on the Social Insurance System contains a limitation that the annual basis for calculating the retirement and disability contributions may not exceed "thirty times the projected average monthly salary in the national economy for a given calendar year" (Act, 1998, Article 19(1)). After exceeding the specified annual basis, these contributions cease to be paid. In 2023, this limit is PLN 208,050 (Announcement, 2022). The lack of contributions, the total amount of which is over 27%, has a significant impact on the formation of the tax wedge and may result in its decrease.

³ The taxpayer's income is subject to income tax, in the case of remuneration, the income is gross pay. Income tax is calculated on the basis of the tax base, which is basically income less social contributions and the so-called employee tax deductible costs – art. 26 sec. 1 and art. 22 sec. 2 of the Act of 26.07.1991 on personal income tax (i.e. Journal of Laws of 2022, item 2647, as amended).

Will the cessation of paying these contributions, despite the increase in the income tax rate, lead to a decrease in the tax wedge?

3. ANALYSIS OF THE TAX WEDGE NON-LINEARITY

In the comparative analysis, the following assumptions were made: the considered remuneration applies to a full-time employee under an employment contract. It was assumed that an employee works only under one employment relationship. The workplace is also in the town where the employee lives. The analysis omitted the use of any additional income tax reliefs and deductions, with the exception of the tax-free amount. It was also assumed that the employee is not a member of Employee Capital Plans. The analysis was carried out on an annual basis, because only this approach allows to correctly depict the tax wedge from the point of view of the occurrence of the second tax threshold and the limit of thirty times in retirement and disability contributions. Table 2 presents the results of the conducted analysis, indicating how the tax wedge is shaped in percentage terms for a given amount of gross monthly pay. Changes in the size of the tax wedge are also presented in chart 1.

Table 2. Tax wedge depending on the gross monthly pay

Monthly gross pay (PLN)	Gross pay per year (PLN)	Tax wedge (%)
3490,00	41 880,00	35.57
5000,00	60 000,00	37.94
7000,00	84 000,00	39.51
10 000,00	120 000,00	40.68
13 000,00	156 000,00	42.55
15 000,00	180 000,00	44.57
17 000,00	204 000,00	46.12
20 000,00	240 000,00	46.16
20 100,00	241 200,00	46.16
20 200,00	242 400,00	46.15
21 000,00	252 000,00	46.11
22 000,00	264 000,00	46.05
23 000,00	276 000,00	46.00
24 000,00	288 000,00	45.96
25 000,00	300 000,00	45.91
50 000,00	600 000,00	45.37
75 000,00	900 000,00	45.18
85 000,00	1 020 000,00	45.14
88 000,00	1 056 000,00	45.14
89 000,00	1 068 000,00	45.17
90 000,00	1 080 000,00	45.21
100 000,00	1 200 000,00	45.53
150 000,00	1 800 000,00	46.51

Source: Own study based on the Act on the social insurance system; the Act on health care services financed from public funds; the Act on personal income tax; Act on the protection of employee claims in the event of the employer's insolvency; the Act on employment promotion and labor market institutions.

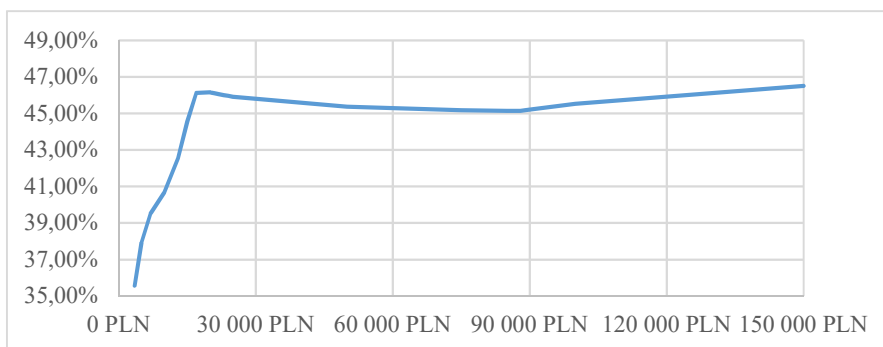


Chart 1. Tax wedge depending on the gross monthly pay

Source: Own study based on the Act on the social insurance system; the Act on health care services financed from public funds; the Act on personal income tax; Act on the protection of employee claims in the event of the employer's insolvency; the Act on employment promotion and labor market institutions.

By employing an employee whose gross pay is at the level of the minimum wage as of January 1, 2023 – PLN 3,490 – the tax wedge will be 35.57%. With a gross pay of PLN 10,000, the tax wedge exceeds 40%. Then the size of the tax wedge reaches the highest value of 46.16% with gross pay of PLN 20,000 and PLN 20,100. Subsequent successive increases in salary no longer lead to an increase in the tax wedge, but its gradual decrease was noted. The tax wedge returns to its progressive character only when the gross pay is PLN 89,000. The highest recorded size of the tax wedge was 46.51% for gross pay of PLN 150,000 per month. The tax wedge for a salary of PLN 100,000 per month is lower than for a gross pay of PLN 17,000 per month. The presented tax wedge is not linear, it increases until the gross pay is reached in the amount of PLN 20,100, and then it decreases.

4. CONCLUSIONS

The article presents the subject of the tax wedge, which is basically characterized by progressivity. However, the increase in the size of the tax wedge in Poland, despite the two-stage, and in reality even three-stage tax scale, is inhibited by limiting the annual maximum basis for retirement and disability contributions. The tax wedge is clearly non-linear, which confirms the thesis formulated in this article. This translates into a higher burden of taxes and contributions among employees earning PLN 17,000 gross than employees earning PLN 100,000 gross. The non-linearity of the tax wedge has consequences, for example, in shaping the labor market, because with a high level of taxes and contributions, the reluctance to legal employment increases. Some employees may also choose to be self-employed. A high level of the tax wedge may also lead to migration of employees to countries where the level of tax and contribution burdens is lower. The increase in the tax wedge after exceeding PLN 89,000 in gross pay is due to the existence of the solidarity levy, which is a relatively new tax, in force since 2019 (Chmielecka, Szulc, 2020). The absence of this tax would result in a further gradual decrease in the tax wedge along with the increase in remuneration.

REFERENCES

- Chmielecka, A., Szulc, A. (2020). *Analiza wpływu zmian wprowadzonych przez ustawę „Polski Ład” na obciążenia podatkowo-składkowe” podmiotów sektora MMP*. „Przestrzeń, Ekonomia, Społeczeństwo”, 18/II. Sopotka Szkoła Wyższa. DOI: 10.23830/18/II/2020/7399.
- Deresz, A., Podstawka, M. (2017). *Zróźnicowanie obciążeń podatkowych podatników uzyskujących wynagrodzenia ze stosunku pracy oraz przedsiębiorców*. „Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu”, nr 488. DOI: 10.15611/pn.2017.488.02.
- Golinowska, S. (2014). *Funkcje państwa w zabezpieczeniu dochodów na okres starości. Zmiana warunków i paradygmatu na przykładzie polskiej reformy systemu emerytalnego* [w:] Frieske, K., Przychodaj, E., red., *Ubezpieczenia społeczne w procesie zmian*. Warszawa: Instytut Pracy i Spraw Socjalnych oraz Zakład Ubezpieczeń Społecznych.
- Kijanka, A., Kowalska-Musiał, M. (2020). *Analiza wielkości i struktury płacowego klina podatkowego w Polsce w latach 2005–2020*. „Zeszyt Naukowy.pl/Wyższa Szkoła Zarządzania i Bankowości w Krakowie”, nr 54.
- Polarczyk, K. (2007). *Klin podatkowy a bezrobocie*. „Infos, Biuro Analiz Sejmowych”, nr 17, 1–4. Warszawa: Wydawnictwo Sejmowe dla Biura Analiz Sejmowych [Access: 26.02.2023]. Access on the internet: [http://orka.sejm.gov.pl/wydbas.nsf/0/ef0b7b7611593a2fc12572f800391c99/\\$file/infos_017.pdf](http://orka.sejm.gov.pl/wydbas.nsf/0/ef0b7b7611593a2fc12572f800391c99/$file/infos_017.pdf).
- (2008). *Opodatkowanie wynagrodzeń za pracę (składki i PIT) w państwach Unii Europejskiej*. „Analizy Biura Analiz Sejmowych”, nr 6 [Access: 07.03.2023]. Access on the internet: <https://orka.sejm.gov.pl/WydBAS.nsf/0/CA3DD054B8A4AD20C12574960043A26A?OpenDocument>.
- Szaban, J. (2016). *Rynek pracy w Polsce i w Unii Europejskiej*. Warszawa: Difin.
- Szczepański, M. (2014). Zarządzanie ryzykiem długowieczności w polskim systemie emerytalnym. „Finanse, Rynki finansowe, Ubezpieczenia, 65”. Szczecin: Zeszyty Naukowe Uniwersytetu Szczecińskiego.
- Wojciuk, M., Dziemianowicz, R. (2017). *Assessment of progressiveness of tax wedge in Poland and selected European Union countries*. “Research papers of Wrocław University of economics”, No. 475. DOI: 10.15611/pn.2017.475.33.
- Związek Przedsiębiorców i Pracodawców (2020). *Portret przedsiębiorcy* [Access: 22.01.2023]. Access on the internet: <https://zpp.net.pl/projekty/portret-przedsiębiorcy/>.

LEGAL ACTS

- Act of 13.07.2006 on the protection of employee claims in the event of the employer's insolvency (i.e. Journal of Laws of 2020, item 7 as amended).
- Act of 13.10.1998 on social insurance system (i.e. Journal of Laws of 2022, item 1009 as amended).
- Act of 20.04.2004 r. on employment promotion and labor market institutions (i.e. Journal of Laws of 2022, item 690 as amended).
- Act of 26.07.1991 on personal income tax (i.e. Journal of Laws of 2022, item 2647, as amended).
- Act of 27.08.2004 on health care services financed from public funds (i.e. Journal of Laws of 2022, item 64 as amended).
- Announcement of the Ministry of Family and Social Policy of 13.10.2022 on the amount of the limitation of the annual basis for calculating contributions to the pension and

disability insurance in 2023 and the amount of the forecast average salary adopted to determine it (M.P. of 2022, item 1014).

Regulation of the Ministry of Family and Social Policy of 16.03.2021 amending the regulation on differentiation of the rate percentage social security contribution for accidents at work and occupational diseases, depending on occupational hazards and their effects (Journal of Laws of 2021, item 489).

