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Macroeconomic and sectoral specific determinants of bank levies' inflows in European Union

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Abstract

The main objective of the article is to determine the factors affecting the level of inflows from bank taxes and bank fees (understood as the burden allocated to a stabilisation fund), together referred to as bank levies. Seven groups of explanatory variables are assigned to macroeconomic, sectoral and social factors. Using the panel regression approach and data from 13 EU countries over the period 2011–2019, the authors proved that they are both of a macroeconomic nature (budget deficit, annual net earnings and consumption expenditure of households as a percentage of GDP) and specific for banking sector – the size of the banking sector measured by total liabilities and banks' profitability reflected by profit (loss) before tax from continuing operations. This study is the first to test a broad spectrum of 40 potential determinants of bank levy revenues, representing clusters of macroeconomic, sectoral and social factors. The conclusions obtained can be useful primarily for governments, which on the basis of forecasts of macroeconomic aggregates and the size of the banking sector can produce a projection of bank levy revenues.

Keywords: banking sector, bank tax, bank levy

JEL: G21, G28, H21

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1. Introduction

The immense bailout of the financial sector, responsible for the subprime crisis, triggered widespread support for the idea of imposing additional fiscal burdens on financial and credit institutions (Mara 2012). Following up on the request expressed by G20 leaders to identify how the financial sector could cover the costs associated with aid received during the subprime crisis, the IMF proposed the following solutions (Claessens, Keen, Pazarbasioglu 2010):

- Financial Stability Contribution (FSC) related to the resolution mechanism. FSC would consist of an obligation to pay for the fiscal cost of any future government support to the financial sector. This kind of payment is allocated to a fund dedicated to the resolution of weak institutions or is paid directly to the state budget. It is assumed that the size of the contribution will depend on the type of institution and its impact on systemic risk;
- Financial Activities Tax (FAT), the value of which will be linked with the income of the institution (tax to be paid to the state budget). This form of taxation comes in three varieties: from FAT1, replacing de facto VAT, through FAT2 (the tax base is economic rent) to FAT3, where the tax base is equal to a bank's net result increased by the bonuses of the bank's management over a defined threshold (Martysz, Bartlewski 2018).

Additionally, taxes imposed strictly on credit or financial institutions include (Martysz, Bartlewski 2018; Marcinkowska 2011):

– Financial Transactions Tax (FTT) – a form of turnover tax charged, for example, on foreign exchange transactions (CTT), operations on derivatives and securities (STT), capital increase or operations on bank accounts (BTT),

– additional income tax (increased CIT rate),

– tax on additional remuneration (bonuses),

– corrective taxes (e.g. depending on the institution's contribution to the systemic risk).

The subject of consideration in this paper is a bank burden in the FSC formula. As indicated earlier, the proceeds of such a bank payment may go to the state budget or to the Financial Stabilisation Fund. In the literature (e.g. Mielczarek 2020) bank tax is defined as a burden collected by the state budget, while the funds that create the stabilization fund are referred to as a bank fee. The fiscal objective is considered to be dominant. The tax is understood both as compensation for state spending on bank bailouts and as a source of funding for similar undertakings in the future. In addition, the payment estimation algorithm is expected to encourage banks to pursue less risky lending and investment and liquidity policies which in turn shall promote the stability of the banking sector (Kozłowska 2017).

In this paper the subject of analysis is both the bank tax and bank fee, together referred to as the bank levy. In some cases, the proceeds are either split between the state budget and the stabilisation fund or they contribute to the stabilisation fund for a predetermined period, or until it reaches a given value (defined either in absolute terms or as a percentage of the banking system's size, e.g. of its assets). The basis for charging the bank levy may be:

– assets,

– liabilities,

– capital requirement,

– risk weighted assets (RWA).

The bank levy rate can be progressive. This means that the levy rate is higher, the higher the levy bracket, and in particular for some banking systems, the levy is charged only on the surplus of the predetermined taxable base. Exemptions are also used when determining the levy base (Pawłowicz 2015; Gajewski 2016; Dec, Masiukiewicz 2013). In the case of:

– assets, the levy base can be reduced by: (i) interbank loans or (ii) the levy free amount (for the RWA levy base),

– liabilities, the levy base can be reduced by: (i) capital, insured deposits and the levy free amount or (ii) all items other than deposits or (iii) capital and insured deposits or (iv) capital, insured deposits, issued mortgage bonds and subordinated liabilities or (v) capital, insured deposits and intra-group liabilities.

Imposing additional burdens on credit and financial institutions (sometimes declared by the government as temporary, i.e. valid for a predefined period of time) always meets with a negative response from these entities. Opponents of the bank levy usually stress its negative impact on the economy and moderate potential for improving the fiscal situation (Osvát, Osvát 2010). The risks also include a squeeze of lending, an augmentation of the prices of banking products, a decrease in the profitability of banks and discouragement of bank investments (Giżyński 2021; Stypułkowski 2020).

In the era of the fight against the COVID-19 pandemic and the shift of significant crisis-related burdens to commercial banks, the question arises on the resilience of specific sectors and types of banks to the deterioration in the quality of loan portfolios and monetary policy actions, especially those related to interest rate cuts in the initial phase of the pandemic (Korzeb, Niedziółka 2020; Korzeb, Niedziółka, Silva 2021; Bernardelli, Korzeb, Niedziółka 2021; Zaleska 2021). In this context, a reduction or suspension of the bank levy for a certain period, a change in its calculation formula or the exemption of certain assets/liabilities from the levy base are widely discussed solutions (Mórawski 2020; Stypułkowski 2020).

The objective of this study is to determine the macroeconomic, sectoral and social factors affecting the level of inflows from bank levies.

The remainder of this article is structured as follows. Section 2 reviews the most significant literature. The next section describes the data and methodology employed in the empirical research. Section 4 presents the results, which are also discussed. The last part of the manuscript summarises and presents the main conclusions.

2. Literature review

An overview of the up-to-date studies on bank levies shows two fundamental research streams of this topic:

– the impact of the bank levy on credit policy, the structure of a bank's funding and its risk profile,

– the scope and form of transfer of the tax burden to bank clients.

Devereux, Johannesen and Vella (2019) conclude that banks with higher exposure to levies amplify their reliance on equity funding and increase the risk of their credit portfolio. Borowski, Tymoczko and Jaworski (2016) find that the bank tax results in a shrinking of banks' equity and a decrease in lending. Puławska (2020) examines the impact of the bank tax introduced in Poland in 2016 on the functioning of the interbank market (interbank operations in Poland have also been taxed). She proves

that the form of a bank tax (calculated on assets) has a negative impact on the interbank market, which is expressed by the reduction of the volume of one-year operations combined with an increase in the scale of 3-month loans. Moreover, the dispersion of 1 and 3 months quotations decreased, while for short-term (Overnight and Tomorrow Next) operations the dispersion increased. At the same time a drop of turnover and volatility was reported. Puławska (2021) verifies the impact of the introduction of a bank levy on the profitability of commercial banks and the change in their balance sheet structures in Germany (bank tax) and Hungary (bank fee). Her results indicate a negative impact of the bank levy on ROA of the largest Hungarian and smaller German banks. In the case of Hungary, the bank fee did not cause a credit squeeze, unlike the bank tax in Germany. Following the implementation of Basel III, bank fee revenues in Hungary declined, while in Germany this event and the introduction of the Single Resolution Fund led to an increase in bank tax. Levies linked to liabilities also create incentives to reduce banks' leverage as liabilities become more expensive. The above-mentioned effect is weaker, the more elevated corporate income taxes are, which means that in countries with high CIT burdens the incentives to diminish leverage are insignificant (Bremus, Schmidt, Tonzer 2020).

Although in many jurisdictions (including Poland) there is an official prohibition of banks transferring the levy burdens to their customers, such practice takes place in an indirect and camouflaged form. Chiorazzo and Milani (2011) examine to what extent European banks were able to pass their own levy burden to their customers. The above-mentioned authors analyse the impact of CIT and VAT on pre-tax profits and evidence that banks managed to shift levies to customers and smooth the structure of the profit and loss account to a significant extent. Also the introduction of the FSC translates into growth of lending rates, but even assuming that the additional cost can be fully shifted onto customers, the increase in the cost of funding will be lower than the FSC rate (Weder di Mauro 2010). Kogler (2019) concludes that banks transfer bank levies to customers mainly by rising lending rates. In the environment of growing interest rates, the deposit rates are also subject to an increase, albeit to a lesser extent than in the case of lending rates. This practice is mainly followed by banks with high loan-to-deposit ratios. This author also finds that the introduction of a bank levy enhanced net interest margins. The process of shifting the burdens to bank customers is more effective in banking systems with a high concentration and is usually weak for banks with high capital adequacy ratios. Capelle-Blancard and Havrylchyk (2017) prove that the pass-through of bank fiscal obligations levied on loans is stronger if elasticity of credit demand is low. The levy is shifted to customers with the smallest demand elasticity (like households). While analysing the achievement of the bank levy objectives set before its introduction, interesting conclusions are drawn by Buch, Hilberg and Tonzer (2016). Focusing on data from the German market, these authors find that the tax revenue turned out to be lower than expected, the dominant part of the revenue came from large commercial banks, and banks affected by burdens reported a reduction in lending and higher deposit rates.

This article focuses on the determinants of tax revenues. This problem is the subject of numerous studies. Karagöz (2013), analysing the Turkish economy, concludes that tax revenues are significantly dependant on the share of agricultural and industrial sectors in GDP, foreign debt stock, the monetization rate of the economy and the urbanization rate. The results of the study referring to Jordan and conducted by AL-Qudah (2021) prove that GDP per capita, fiscal deficit, foreign capital inflows and government expenditure are determinants for tax revenues in the short run as well as in the long run, while industrial sector value added and economic openness are significant variables only in the short run. Castro and Camarillo (2014), using static and dynamic panel data measures,

analyse the impact of economic, structural, institutional and social factors on tax revenues in 34 OECD countries over the period from 2001 till 2011. Their results show that GDP per capita, the industrial sector and civil liberties have a positive impact, while the agricultural sector and the share of foreign direct investment in gross fixed capital formation have a negative impact on the level of tax revenues. Andrejovska and Pulikova (2018), using data from 28 European Union (EU) countries and applying the pooling model, the fixed effects model and the random effects model, come to the conclusion that the strongest correlation is between tax revenues and the employment rate, foreign direct investment and GDP. Using a fixed effects model, Awasthi, Le and You (2020) prove that both GDP and size of population are positively correlated with property tax revenues. Nguyen, Pham and Quan (2022) come to the conclusion that, among other things, the openness of the economy, foreign direct investment, the ratio of foreign debt to GDP and the ratio of value added in industry to GDP have a positive impact on tax revenues. Baunsgaard and Keen (2010) show that because of taxes imposed on imports, trade has a positive impact on tax revenues. The social factors (e.g. index of democratic rights, civil liberties, political rights) of tax system efficiency are pointed out by Profeta and Scabrosetti (2010). However, these authors, analysing 11 Asian countries, show that the variables for the high school graduation rate and the share of the urban population have no impact on tax revenues. At the same time, the proportion of the over-65 population is negatively correlated with the level of fiscal revenues. Lompo (2021) suggests that the development of financial sectors positively and significantly influences tax revenues. Saptono and Mahmud (2021), using the fixed effects model, find a positive and significant impact of GDP per capita, manufacturing and trade openness on the tax-to-GDP ratio. Gilbert and Ilievski (2016) find that the larger the banking sector, the higher the tax revenues.

Taking these results into account, the hypothesis has been formulated that the level of inflows from the bank levy is determined by macroeconomic, sectoral and social factors, whereas the most important are those of a macroeconomic nature. At the same time, the survey carried out has not allowed to identify research papers dealing exclusively with the determinants of bank levy revenues, so this study fills a research gap.

3. Data and model

For our analysis we used panel regression. Our panel was built for 13 EU states over 9 years (Table 1). For our research we used all EU Member States which used a bank levy in the period 2011–2019. Member States that introduced a bank levy after 2011 (e.g. Poland) or resigned from it before 2019 were excluded from the sample. Our approach was motivated by the fact that we wanted to achieve a statistically balanced panel, while not limiting our observations to any shorter period (which in any case would affect the value of the model).

We selected for our model approx. 40 dependent variables that based on our knowledge and experience may affect the level of state revenues from the bank levy (Table 2). The above-mentioned dependent variables were assigned to seven categories: General Economy, Internationalization, Taxation of Income, Limited Liability Companies, Government Finance, Banking Sector Characteristics and Population. These seven categories were thereafter aggregated in three groups of determinants, i.e. macroeconomic, sectoral and social clusters of factors. As mentioned above, the term "macroeconomic, sectoral and social" aggregates all seven determinant groups outlined in the Table 2 and used in the empirical study:

– macroeconomic: General Economy (ECON), Internationalization (INTER), Taxation of Income (TAX), Limited Liability Companies (LLC), Government Finance (GOV),

– sectoral: Banking Sectors Characteristics (BANK),

– social factors: Population (POP).

The selection of variables was carried out by the expert method and on the basis of previous studies dedicated to this issue (Sobiech, Chronopoulos, Wilson 2021; Devereux, Johannesen, Vella 2019; Kogler 2019; Buch, Hilberg, Tonzer 2016). They included both those of a macroeconomic character and related specifically to the banking sector (Table 3).

Most macroeconomic data was sourced from Eurostat or the official annual publication of the EC Commission on Taxation trends in the European Union. If figures were not available, we used the OECD database. Such an approach provided relative homogeneity of data across countries. Numbers were usually complete for all periods. We used imputation for statistical purposes only in exceptional cases and provided that the volatility of the particular determinant was low (otherwise we resigned from using the variable for all states). As a result, we arrived at a good quality balanced panel. Data of the European Central Bank and central banks of the individual countries analysed were also used.

In order to define the relationship between revenues from bank levy and variables under assessment, we estimated the following model:

$$BankLevyRev_{it} = \beta_0 + \beta_1 (ECON)_{it} + \beta_2 (INTER)_{it} + \beta_3 (TAX)_{it} + \beta_4 (LLC)_{it} + \beta_5 (POP)_{it} + \beta_6 (GOV)_{it} + \beta_7 (BANK)_{it} + \phi_i + \varepsilon_{it}$$

where:

$BankLevyRev_{it}$ is the revenues (in mn EUR) after adjustments of the final variable of country i in year t,
$ECON$ is a vector of variables representing the general economy,
$INTER$ is a vector of variables representing the internationalisation,
TAX is a vector of variables representing the taxation of income,
LLC is a vector of variables representing the limited liability companies,
POP is the vector of variables representing the population,
GOV is the vector of variables representing the government finance,
$BANK$ is the vector of variables representing the banking sectors characteristics,
ϕ_i represents unobservable individual effects specific for a particular state,
ε_{it} is an error term.

We use the fixed effects model. This is due to the fact that we believe that there are some specific features of each country. Some of those features may not be observable or quantifiable. We acknowledge that the Hausman test suggests that the random effects model may be appropriate. However, we want to control for variables within a particular state rather than between them. Moreover, our sample is not coincidental, but we selected all countries that are part of the EU that both impose a bank levy and provide for comprehensive data enabling to build a model. In other words, our observations cannot be simply described as being a random sample.

We ran the model multiple times till we arrived at a best quality model. For the estimated model, 12 determinants are significant at least at 0.05 level. The model as a whole is statistically

significant. Most dependent variables we used proved not to be significant and we excluded them from the estimation.

Among the determinants which were finally used in the model there are no variables that feature a medium or high correlation (this is also confirmed by low VIF for selected determinants). As it may be expected, Durbin-Watson statistics confirm that there is almost no autocorrelation issue.

R^2 is high with 0.94, whereas adjusted R^2 amounts to 0.81. According to the performed test, the group has no common intercept. Further to the Pesaran CD test, there is no cross-sectional dependence in residuals.

The drawback of the above model is the heteroskedasticity revealed by the Wald test. Hence, the model could be biased and the actually reported standard errors could be too small. Therefore, to correct for these issues we build an alternative model using a Weighted Least Squares estimation. In this alternative model the set of significant variables is partly different. Seventeen determinants proved to be significant (fifteen of them at 0.05 level and two at 0.01 level). Any statistical tests for that modified model confirm its good quality.

4. Analysis of results and discussion

Due to the relatively small sample size and various levy collection methods, the results of the survey should be treated with some caution. The complexity and individuality of setting a bank levy base means that in principle each country should be considered on its own merits (which is the reason why we used a fixed effect model). The final results were also strongly influenced by the fact that the time horizon of the study covered the period 2011–2019, which was very diverse in terms of the economic conditions in specific countries, which in turn were characterised by a different level of development of the banking sector. In spite of the aforementioned issues, which had a direct impact on the final results of the study, the analysis allows certain clear tendencies regarding the influence of individual factors on the value of bank levy revenues to be observed. The research carried out clearly shows that there are determinants influencing the amount of proceeds received from the banking sector. It allowed two models with the best quality to be designed (Tables 4 and 5). It seems that the macroeconomic parameters of a given country and the size of the banking sector are the key variables influencing the amount of bank levy collected. It is quite symptomatic that in both models the importance of the variable 'Government deficit as a percentage of GDP (DEF)' becomes apparent. This issue is quite widely reported in the literature (Gunter et al. 2021; Nwosu, Okafor 2014; Narayan, Narayan 2006). On the one hand, it is justified by the Ricardian Equivalence, which was later extended and refined by Robert Barro (1974, 1989). The concept of Ricardian Equivalence theory is based on the hypothesis of rational expectations and takes into account the problem of transfer of resources between successive generations.

It proves that government borrowing from the private sector or additional money supply do not differ in effect from covering an increase in government spending with tax revenues. Government spending by increasing public debt and deficit consequently raise the tax burden on both economic agents and households (Ahiakpor 2013). On the other hand, the relationship shown in both models between the level of the budget deficit and tax revenue is explained by the Granger Causality. Here, it is suggested that the higher tax revenue will facilitate additional (and sometimes discretionary) government expenditure (Arvin, Pradhan, Nair 2021). The results of the article also confirm previous

academic studies in which the determinant of tax revenues is the general economic prosperity of the country (Şen, Kaya 2015; Rybová 2015; Yan, Gong 2009). The variables Annual Net Earnings (ANE) and Consumption Expenditure of Households as a percentage of GDP (CONS) are significant in both models. Both of these factors are among the most important stimulators of state budget revenues. Not surprisingly, they also affect bank levy rates (Eika, Mogstad, Vestad 2020).

On the other hand, variables related to the banking sector seem to be less important. This is due to the specificity of the bank levy. On the one hand, it was introduced in some countries as an indirect instrument to achieve regulatory objectives and implement the Bank Recovery and Resolution Directive (BRRD), while on the other hand, it was of a typically fiscal nature.

The impact of variables related to the banking sector on the amount of bank levy inflows is a highly complex issue, which is primarily connected with the application of levy optimization by cross-border banking groups, for example, through the possibility of reallocation of a selected part of the portfolio of assets and/or liabilities outside the local jurisdiction (Janský 2020; Huizinga, Voget, Wagner 2014; Demirgüç-Kunt, Huizinga 2001), changes in banks' applied asset-liability management policies as implications of implemented bank levy regulations (Buch, Hilberg, Tonzer 2016), and the possibility of shifting the fiscal burden to customers through increased prices of banking products and services (Capelle-Blancard, Havrylchyk 2013).

5. Conclusions

The response of global financial and political bodies to the subprime crisis included primarily a thorough reform of quantitative and qualitative regulations to strengthen the capital base and liquidity of banks. After identifying systemically important banks, stress tests imitating real crises were implemented. Mechanisms for controlled bank restructuring and bankruptcy have also been built (more on this for example in: Kozińska et al. 2020). Finally, it was decided to introduce various levies on banks to compensate for past state support to the sector and at the same time to finance the bailout in the future. In this article, based on data for 13 EU countries applying a bank levy in the years 2011–2019, the authors have attempted to identify factors that are important for bank levy revenues. The analysis using two separate best-fit models showed that these determinants are mainly of a macroeconomic nature (including the budget deficit, annual net earnings and consumption expenditure of households as a percentage of GDP). Also, the size of the banking sector measured by total liabilities and banks' profitability reflected by profit (loss) before tax from continuing operations are important factors affecting bank levy revenues. At the same time, the study does not provide clear conclusions on the impact of the degree of concentration of the banking sector (measured by HHI) and its liquidity on the amount of bank levy revenue. To the authors' knowledge, this study is the first to test such a broad spectrum of potential determinants of bank levy revenues, representing groups of macroeconomic, sectoral and social factors. The conclusions obtained can be useful primarily for governments, which on the basis of forecasts of macroeconomic aggregates and the size of the banking sector, can produce a projection of bank levy revenues. An expansion of the analysis in terms of the determinants (other than indicated in the study), periods and a sample size is also planned. By extending the sample to more countries, the clusters of economies representing different algorithms for calculating bank levies can be filtered out. In this case, the strength of explanatory variables of the inflows from bank levies can be verified in the miscellaneous models of the bank levies.

References

Ahiakpor J.C.W. (2013), The modern Ricardian equivalence theorem: drawing the wrong conclusions from David Ricardo's analysis, *Journal of the History of Economic Thought*, 35(1), 77–92.

AL-Qudah A.M. (2021), The determinants of tax revenues: empirical evidence from Jordan, *International Journal of Financial Research*, 12(3), 43–54, https://doi.org/10.5430/ijfr.v12n3p43.

Andrejovska A., Pulikova V. (2018), Tax revenues in the context of economic determinants, *Montenegrin Journal of Economics*, 14(1), https://doi.org/10.14254/1800-5845/2018.14-1.10.

Arvin M.B., Pradhan R.P., Nair M.S. (2021), Are there links between institutional quality, government expenditure, tax revenue and economic growth? Evidence from low-income and lower middle--income countries, *Economic Analysis and Policy*, 70, 468–489.

Asen E. (2021), *Bank taxes in Europe*, https://taxfoundation.org/bank-taxes-in-europe-2021/, European Union, taxes in Europe database, https://ec.europa.eu/taxation_customs/tedb/splSearchForm.html.

Awasthi R., Le T.M., You Ch. (2020), *Determinants of property tax revenue: lessons from empirical analysis*, Policy Research Working Paper, 9399, World Bank, https://openknowledge.worldbank.org/bitstream/handle/10986/34485/Determinants-of-Property-Tax-Revenue-Lessons-from--Empirical-Analysis.pdf?sequence=1&isAllowed=y.

Barro R.J. (1974), On the determination of the public debt, *Journal of Political Economy*, 57, 940–971.

Barro R.J. (1989), The Ricardian approach to budget deficits, *Journal of Economic Perspectives*, 3(2), 37–54.

Baunsgaard T., Keen M. (2010), Tax revenue and (or?) trade liberalization, *Journal of Public Economics*, 94(9–10), 563–577, https://doi.org/10.1016/j.jpubeco.2009.11.007.

Bernardelli M., Korzeb Z., Niedziółka P. (2021), The banking sector as the absorber of the COVID-19 crisis? Economic consequences: perception of WSE investors, *Oeconomia Copernicana*, 12(2), 335–374.

Borowski J., Tymoczko D., Jaworski K. (2016), *Wpływ podatku bankowego w Polsce na kredyt dla sektora niefinansowego*, Studia Ekonomiczne. Zeszyty Naukowe Uniwersytetu Ekonomicznego w Katowicach, 287, 7–21.

Bremus F., Schmidt K., Tonzer L. (2020), Interactions between bank levies and corporate taxes: How is bank leverage affected?, *Journal of Banking & Finance*, 118, https://doi.org/10.1016/j.jbankfin.2020.105874.

Buch C.M., Hilberg B., Tonzer L. (2016), Taxing banks: an evaluation of the German bank levy, *Journal of Banking & Finance*, 72(C), 52–66.

Capelle-Blancard G., Havrylchyk O. (2013), *The Ability of Banks to Shift Corporate Income Taxes to Customers*, MIT Press.

Capelle-Blancard G., Havrylchyk O. (2017), Incidence of bank levy and bank market power, *Review of Finance*, 21(3), 1023–1046.

Castro G.A., Camarillo D.B.R. (2014), Determinants of tax revenue in OECD countries over the period 2001–2011, *Contaduría y Administración*, 59(3), 35–59.

Chiorazzo V., Milani C. (2011), The impact of taxation on bank profits: evidence from EU banks, *Journal of Banking and Finance*, 35(12), 3202–3212, https://doi.org/10.1016/j.jbankfin.2011.05.002.

Claessens S., Keen M., Pazarbasioglu C. (2010), *Financial Sector Taxation: The IMF's Report to the G-20 and Background Material*, http://www.imf.org/external/np/seminars/eng/2010/paris/pdf/090110.pdf.

Dec P., Masiukiewicz P. (2013), *Podatek bankowy*, Wydawnictwo C.H. Beck.

Demirgüç-Kunt A., Huizinga H. (2001), The taxation of domestic and foreign banking, *Journal of Public Economics*, 79, 429–453.

Devereux M.P., Johannesen N., Vella J. (2019), Can taxes tame the banks? Evidence from the European bank levies, *Economic Journal*, 129(624), 3058–3091, https://doi.org/10.1093/ej/uez028.

Eika L., Mogstad M., Vestad O.V. (2020), What can we learn about household consumption expenditure from data on income and assets?, *Journal of Public Economics*, 189, 104163.

Gajewski D.J. (2016), Podatek bankowy w Polsce – wady i zalety, *Analizy i Studia CASP*, 1(1), 1–24, https://doi.org/10.33119/ASCASP.2016.1.1.

Gilbert S., Ilievski B. (2016), Banks, development, and tax, *The Quarterly Review of Economics and Finance*, 61, 1–13, https://doi.org/10.1016/j.qref.2016.01.001.

Giżyński J. (2021), *Four years of tax levy on certain financial institutions in Poland – implications for the banking sector*, Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu, 65(2), 33–56.

Gunter S., Riera-Crichton D., Vegh C.A., Vuletin G. (2021), Non-linear effects of tax changes on output: the role of the initial level of taxation, *Journal of International Economics,* 131, 103450.

Huizinga H., Voget J., Wagner W. (2014), International taxation and cross-border banking, *American Economic Journal: Economic Policy*, 6(2), 94–125.

Janský P. (2020), European banks and tax havens: evidence from country-by-country reporting, *Applied Economics*, 52(54), 5967–5985.

Karagöz K. (2013), Determinants of tax revenue: Does sectorial composition matter?, *Journal of Finance, Accounting & Management*, 4(2), 50–63.

Kogler M. (2019), On the incidence of bank levies: theory and evidence, *International Tax and Public Finance*, 26(4), 677–718.

Korzeb Z., Niedziółka P. (2020), Resistance of commercial banks to the crisis caused by the COVID-19 pandemic: the case of Poland, *Equilibrium. Quarterly Journal of Economics and Economic Policy*, 15(2), 205–234.

Korzeb Z., Niedziółka P., Silva A. (2021), Impact of the COVID-19 crisis on the Portuguese banking system. Linear ordering method, *Estudios Gerenciales*, 37(159), 226–241.

Kozińska M., Michalewicz J., Pycka J., Zdanowicz B. (2020), *Implikacje doświadczeń krajowych i międzynarodowych dla procesu zarządzania kryzysowego w polskim systemie finansowym*, Materiały i Studia, 336, Narodowy Bank Polski, https://www.nbp.pl/publikacje/materialy_i_studia/ms336.pdf.

Kozłowska A. (2017), Podatek bankowy w krajach UE – wybrane aspekty, *Kwartalnik Nauk o Przedsiębiorstwie*, 2, 88–100.

Lompo A.A.B. (2021), *How financial sector development improve tax revenue mobilization for developing countries?*, Études et Documents, 24, CERDI.

Mara E.-R. (2012), *Taxation of financial sector after the crisis in the European Union*, Annals of Faculty of Economics, University of Oradea, Faculty of Economics, 1(2), 477–482.

Marcinkowska M. (2011), Dodatkowe podatki i opłaty od banków – potrzeby praktyki i dylematy teorii finansów, in: K. Jajuga (ed.), *Finanse – nowe wyzwania teorii i praktyki. Problemy wiodące*, Wydawnictwo Uniwersytetu Ekonomicznego.

Martysz Cz., Bartlewski B. (2018), Podatek bankowy – koncepcja europejska i studium przypadków wybranych krajów UE, *Studia BAS*, 1(53), 101–133.

Mielczarek M. (2020), Efekty fiskalne wprowadzenia podatku bankowego w Polsce, *Wroclaw Economic Review*, 26(2), 123–143.

Mórawski K. (2020), *Czy należy zawiesić podatek bankowy od nowych kredytów?*, https://alebank.pl/czy-nalezy-zawiesic-podatek-bankowy-od-nowych-kredytow/?id=328758&catid=25926.

Narayan P.K., Narayan S. (2006), Government revenue and government expenditure nexus: evidence from developing countries, *Applied Economics*, 38(3), 285–291.

Nguyen M.H., Pham T.M., Quan M.Q.B. (2022), The determinants of tax revenue: a study of Southeast Asia, *Cogent Economics & Finance*, 10, 1, https://doi.org/10.1080/23322039.2022.2026660.

Nwosu D.C., Okafor H.O. (2014), Government revenue and expenditure in Nigeria: a disaggregated analysis, *Asian Economic and Financial Review*, 4(7), 877–892.

Osvát K., Osvát S. (2010), *Bank tax in Hungary. Quick analysis on a debated pioneering step. The idea is not popular Down Under*, Working Paper Series, 1(2), ANU Centre for European Studies, https://openresearch-repository.anu.edu.au/bitstream/1885/146153/1/2010-2_Bank-Tax-Hungary.pdf.

Pawłowicz L. (2015), *Stanowisko Instytutu Badań nad Gospodarką Rynkową (IBNGR) wobec opodatkowania banków w Polsce*, Instytut Badań nad Gospodarką Rynkową.

Profeta P., Scabrosetti S. (2010), *The Political Economy of Taxation: Lessons from Developing Countries*, Edward Elgar Publishing.

Puławska K. (2020), Effects of the bank levy introduction on the interbank market, *International Journal of Finance & Economics*, https://ssrn.com/abstract=3536925, http://dx.doi.org/10.2139/ssrn.3536925.

Puławska K. (2021), The effect of bank levy introduction on commercial banks in Europe, *Journal of Risk and Financial Management*, 14(6), 279, https://doi.org/10.3390/jrfm14060279.

Rybová J. (2015), The share of excise taxes on consumption expenditure of consumers in the European Union, *Procedia Economics and Finance*, 25, 590–597.

Saptono P.B., Mahmud G. (2021), Macroeconomic determinants of tax revenue and tax effort in Southeast Asian countries, *Journal of Developing Economies*, 6(2), 253–274.

Şen H., Kaya A. (2015), Taxes and private consumption expenditure: a component based analysis for Turkey, *Turkish Studies*, 17(3), 474–501.

Sobiech A.L., Chronopoulos D.K., Wilson J.O.S. (2021), The real effects of bank taxation: evidence for corporate financing and investment, *Journal of Corporate Finance*, 69, 101989, https://doi.org/10.1016/j.jcorpfin.2021.101989.

Stypułkowski C. (2020), Przemyśleć podatek bankowy, *Dziennik Gazeta Prawna*, 10 July, https://edgp.gazetaprawna.pl/e-wydanie/57312,10-lipca-2020/70837,Dziennik-Gazeta-Prawna/726273,Przemyslec-podatek-bankowy.html.

Weder di Mauro B. (2010), Quantitative impact of taxing or regulating systemic risk, in: S. Claessens, M. Keen, C. Pazarbasioglu (eds.), *Financial Sector Taxation, The IMF's Report to the G-20 and Background Material*, http://www.imf.org/external/np/seminars/eng/2010/paris/pdf/090110.pdf.

Yan C., Gong L. (2009), Government expenditure, taxation and long-run growth, *Frontiers of Economics in China*, 4, 505.

Zaleska M. (2021), Reakcja sieci bezpieczeństwa finansowego na wybuch pandemii COVID-19, in: M. Zaleska (ed.), *Wpływ COViD-19 na finanse. Polska perspektywa*, Difin.

Appendix

Table 1
Country sample and bank levy base

No.	Specification	Implementation	Bank levy base
1	Austria	2011	The percentage of a bank's balance sheet totals after subtracting secured deposits, equity and trust transactions
2	Belgium	2012	The average amount of "debt towards clients" of the year preceding the tax year
3	Cyprus	2011	Deposits
4	France	2011	Minimum equity requirement
5	Germany	2011	"Contribution-relevant liabilities", which are total liabilities minus equity, customer deposits, profit participation rights, and reserve funds for general banking risk
6	Greece	1975	Value of the credit portfolio
7	Hungary	2010	Total assets of credit institutions excluding interbank assets
8	Netherlands	2012	The unsecured debt of the bank which equals the total amount of equity and liabilities on the balance sheet minus the amount of Tier 1 capital, the actually secured deposits under a deposit insurance scheme and the liabilities connected with the assurance activities of the bank
9	Portugal	2011	1. Liabilities, less their own Tier 1 and 2 funds and any funds allocated to the warranty deposit fund 2. The notional amount of off-balance-sheet derivative financial instruments
10	Slovakia	2012	Liabilities reduced by the amount of equity on the value of long-term financial resources provided to a branch of a foreign bank and on the value of subordinated debt pursuant to a special regulation
11	Slovenia	2011	Total assets
12	Spain[1]	2014	Deposits
13	Sweden	2009	Total liabilities net of equity and insured deposits

[1] In Spain, a state-wide tax paid by banks replaced in 2014 similar charges previously levied by some Spanish regions.

Source: Asen (2021).

Table 2
Selected diagnostic variables

Selected diagnostic variables	Description
Macroeconomic variables	
General economy (ECON)	
GDP growth (GDP)	Annual growth of GDP
Harmonised Index of Consumer Prices (HICP)	It measures the change over time in the prices of consumer goods and services acquired, used or paid for by EU households
Estimated share of shadow economy to total GDP (SoS)	Market-based production of goods and services, whether legal or illegal, that escapes detection in the official estimates of GDP
Internationalisation (INTER)	
KOF Globalisation Index by ETH Zurich (KOF)	The KOF Globalisation Index measures the economic, social and political dimensions of globalisation
Value of foreign direct investments (FDI)	Foreign Direct Investment (FDI) flows record the value of cross-border transactions
Value of foreign direct investments as a percentage of GDP (FDI%)	Foreign Direct Investment (FDI) flows record the value of cross-border transactions related to GDP
Exports and imports as a GDP share (EX-IM)	Foreign trade turnover related to GDP
Taxation of income (TAX)	
Statutory top corporate income tax rates (CIT)	Top statutory tax rate on corporate income
Statutory top personal income tax rates (PIT)	Top statutory personal income tax rates (including surcharges)
Effective average tax rates for large corporations (EATR)	This is a forward-looking micro-based indicator computed by applying some of the basic tax rules to a hypothetical investment
Implicit tax rate on corporate income (ITR)	Taxes on the income or profits of corporations including holding gains
Limited liability companies (LLC)	
Number of LLCs (NLLC)	Number of LLCs in the analysed countries
Number of persons employed in LLCs (PLLC)	Number of persons employed in LLCs in the analysed countries
Government finance (GOV)	
Government deficit as a percentage of GDP (DEF)	The balance of income and expenditure of government, including capital income and capital expenditures as a percentage of GDP
Government debt as a percentage of GDP (DEBT)	General government debt-to-GDP ratio measures the gross debt of the general government as a percentage of GDP

Table 2, cont'd

Selected diagnostic variables	Description
Sectoral variables	
Banking sectors characteristics (BANK)	
Total assets (ASSET)	Total assets of all domestic banking groups and standalone banks, foreign (EU and non-EU)
Financial liabilities (LIAB)	Controlled subsidiaries and foreign (EU and non-EU) controlled branches
Total loans and advances (LOAN)	Financial liabilities of the banking sectors in the analysed countries
Loans and advances as a % of total assets (LOAN%)	Total loans and advances of the banking sectors in the analysed countries
Loan-to-deposit ratio (LtD)	Total amount of loans by the total amount of deposits of the banking sectors in the analysed countries
Impairment (IMP)	Impairment losses on financial assets of the banking sectors in the analysed countries
Impairment/Loans and receivables (IMP/LOAN)	Impaired loans relative to gross loans and receivables
Share (total assets) of domestic credit institutions	Share (total assets of banking sector) of domestic credit institutions
Share (total assets) of foreign credit institutions	Share (total assets of banking sector) of foreign credit institutions
Profit (loss) before tax from continuing operations (EBT)	Profit (loss) before tax from continuing operations of the banking sectors in the analysed countries
Profit (loss) after tax and discontinued operations (EAT)	Profit (loss) after tax and discontinued operations of the banking sectors in the analysed countries
Social variables	
Population (POP)	
Total population (TPOP)	Total population in the analysed countries
Population aged 15–74 (AGE)	Population aged 15–74 in the analysed countries
Share of 15 to 64 – working age population (SPOP)	Population aged 15–64 in % of total population
Unemployment rate (UNEM)	The share of unemployed persons in the economically active population
Employment rate from 20 to 64 years (EMP)	The share of employed persons in population aged from 20 to 64 years
Annual net earnings (ANE)	Annual net earnings two-earner couple with two children; both earning 100% of the average earning
Consumption expenditure of households as a percentage of GDP (CONS)	The value of products (goods and services) used to satisfy the needs of the total population related to GDP

Table 2, cont'd

Selected diagnostic variables	Description
Gini coefficient (GINI)	A measure of statistical dispersion intended to represent the income inequality or wealth inequality within a nation or any other group of people
Upper secondary education (SEC)	Upper secondary education corresponds to the final stage of secondary education
Tertiary education (TER)	The educational level following the completion of secondary education

Table 3

The basic characteristic for selected diagnostic variables

Selected diagnostic variables	Max	Min	Arithmetic mean	Median	Standard deviation	V(x) standard variability coeff.
Macroeconomic variables						
General economy (ECON)						
GDP growth (GDP)	6.4	-10.1	1.4	1.8	2.4	1.6837
Harmonised Index of Consumer Prices (HICP)	5.7	-1.5	1.4	1.4	1.3	0.9524
Estimated share of shadow economy to total GDP (SoS)	26.0	6.7	16.2	16.1	5.6	0.3450
Internationalisation (INTER)						
KOF Globalisation Index by ETH Zurich (KOF)	89.6	68.8	80.2	80.4	4.9	0.0609
Value of foreign direct investments (FDI)	241729.5	-70573.5	15582.6	5408.9	35762.9	2.2951
Value of foreign direct investments as a percentage of GDP (FDI%)	46.2	-15.3	2.1	1.6	5.9	2.7864
Exports and imports as a GDP share (EX-IM)	190.5	57.8	114.5	104.9	42.4	0.3707

Table 3, cont'd

Selected diagnostic variables	Max	Min	Arithmetic mean	Median	Standard deviation	V(x) standard variability coeff.
Taxation of income (TAX)						
Statutory top corporate income tax rates (CIT)	44.4	10.0	25.0	25.0	7.0	0.2787
Statutory top personal income tax rates (PIT)	57.2	15.0	44.9	50.0	12.0	0.2680
Effective average tax rates for large corporations (EATR)	38.4	11.1	23.2	23.0	6.4	0.2765
Implicit tax rate on corporate income (ITR)	38.2	5.4	17.5	17.4	7.0	0.4006
Limited liability companies (LLC)						
Number of LLCs (NLLC)	2224029.0	30284.0	436467.3	269373.0	521870.5	1.1957
Number of persons employed in LLCs (PLLC)	16085719.0	192310.0	4159071.2	2373528.0	4677350.1	1.1246
Government finance (GOV)						
Government deficit as a percentage of GDP (DEF)	1.9	-14.6	-2.6	-2.4	3.1	-1.1947
Government debt as a percentage of GDP (DEBT)	186.2	35.0	87.5	81.2	35.0	0.4002
Sectoral variables						
Banking sectors characteristics (BANK)						
Total assets (ASSET)	7995668140.0	40421037.0	1926202191.2	985981147.0	2442027998.4	1.2678
Financial liabilities (LIAB)	4904350816.0	33760500.0	1162884016.4	522792099.0	1441989353.0	1.2400
Total loans and advances (LOAN)	4792313609.7	25023572.6	1203577356.7	637733170.4	1441060705.0	1.1973
Loans and advances as a % of total assets (LOAN%)	83.6	48.8	66.4	65.8	6.6	0.0994
Loan-to-deposit ratio (LtD)	326.7	71.8	105.8	92.0	42.3	0.4003
Impairment (IMP)	151326.0	-98122318.0	-7007284.5	-2891192.0	12062878.3	-1.7215
Impairment/Loans and receivables (IMP/LOAN)	0.1	0.0	0.0	0.0	0.0	1.6017

Table 3, cont'd

Selected diagnostic variables	Max	Min	Arithmetic mean	Median	Standard deviation	V(x) standard variability coeff.
Share (total assets) of domestic credit institutions	98.7	11.0	73.8	78.4	24.0	0.3254
Share (total assets) of foreign credit institutions	89.0	1.3	26.2	21.6	24.0	0.9150
Profit (loss) before tax from continuing operations (EBT)	40535571.0	-62817635.0	6004446.8	2467340.0	13343286.3	2.2222
Profit (loss) after tax and discontinued operations (EAT)	30499404.0	-53551791.0	4465015.5	1980562.0	10597346.4	2.3734
ROE	90.1	-100.8	1.0	5.8	20.5	20.4485
ROA	1.6	-8.1	0.0	0.3	1.5	-165.5550
Herfindahl index (HHI)	0.2	0.0	0.1	0.1	0.1	0.5261
Tier 1 ratio in % (TIER1)	23.0	6.3	14.6	15.2	3.0	0.2055
Social variables						
Population (POP)						
Total population (TPOP)	83132.8	847.7	21594.2	1035.8	25102.9	1.1625
Population aged 15–74 (AGE)	62061.3	627.1	16032.7	7825.2	18511.8	1.1546
Share of 15 to 64 – working age population (SPOP)	71.9	62.1	66.1	65.9	2.2	0.0330
Unemployment rate (UNEM)	27.5	3.1	10.1	8.1	5.9	0.5863
Employment rate from 20 to 64 years (EMP)	82.4	52.9	70.5	70.2	6.8	0.0960
Annual net earnings (ANE)	68474.7	22664.8	44480.4	45598.5	12958.4	0.2913
Consumption expenditure of households as a percentage of GDP (CONS)	76.1	43.2	56.4	53.6	9.5	0.1684
Gini coefficient (GINI)	34.8	20.9	28.8	28.2	3.5	0.1215
Upper secondary education (SEC)	85.7	35.8	72.7	75.6	11.0	0.1519
Tertiary education (TER)	40.0	15.5	27.5	28.1	6.1	0.2223

Table 4
Estimations' results – Model I

	Coefficient	**Stand. error**	**t-Student**	**p value**
Const.	-11720.1	2720.23	-4.308	< 0.0001***
SoS	177.217	23.5753	7.517	< 0.0001***
TPOP	0.000525973	5.94273e-05	8.851	< 0.0001***
SPOP	-84.7747	30.9712	-2.737	0.0074***
CONS	38.9069	16.7278	2.326	0.0222**
ANE	-0.0442747	0.00939792	-4.711	< 0.0001***
SEC	34.1217	9.81807	3.475	0.0008***
DEF	36.2027	8.97107	4.035	0.0001***
LIAB	4.01434e-07	8.06144e-08	4.980	< 0.0001***
LtD	1.68322	0.705652	2.385	0.0191**
EBT	4.87782e-06	1.76921e-06	2.757	0.0070***
ROA	-49.7042	14.9265	-3.330	0.0013***
HHI	2352.52	956.467	2.460	0.0158**
Arithmetic mean of the dependent variable	446.9226	Standard deviation of the dependent variable		536.8725
Sum of squares of the residuals	1839682	Standard error of residuals		141.4091
LSDV R^2	0.944977	Adjusted R^2		0.813330
LSDV F(24.92)	65.83479	Value of p for the test F		1.17e-47
Logarithm of credibility	-731.2972	Inform. Akaike's Criterion		1512.594
Bayes. Schwarz criterion	1581.649	Hannan-Quinn Criterion		1540.630
Autocorrelation of residuals - rho1	0.067590	Durbin-Watson Statistics		1.698994

Model I:
Estimation of fixed effects using 117 observations
13 cross-sectional data units were included
Time series length = 9
Dependent variable (Y): $BankLevyRev_{it}$

Table 5
Results of estimations – Model II

	Coefficient	**Stand. error**	**t-Student**	**p value**
Const.	2517.16	561.925	4.480	< 0.0001***
KOF	50.8325	8.76461	5.800	< 0.0001***
EX-IM	-6.55179	1.24939	-5.244	< 0.0001***
GDP	-38.4689	8.02409	-4.794	< 0.0001***
EATR	-20.2649	5.27838	-3.839	0.0002***
AGE	-0.0136655	0.00734942	-1.859	0.0659*
CONS	20.1850	3.77500	5.347	< 0.0001***
EMP	-36.4630	5.52299	-6.602	< 0.0001***
ANE	-0.00505804	0.00264472	-1.913	0.0587*
GINI	-67.2732	9.94527	-6.764	< 0.0001***
TER	-16.9891	2.71926	-6.248	< 0.0001***
DEF	28.9650	7.01715	4.128	< 0.0001***
ASSET	-3.42511e-07	1.54474e-07	-2.217	0.0289**
LtD	-1.63198	0.411102	-3.970	0.0001***
LOAN	1.14552e-06	2.68200e-07	4.271	< 0.0001***
LOAN%	-11.4700	2.89566	-3.961	0.0001***
IMP	1.34818e-05	2.80166e-06	4.812	< 0.0001***
HHI	-1923.82	410.258	-4.689	< 0.0001***

Basic statistics for weighted data

Arithmetic mean of the dependent variable	96.80725	Standard error of residuals	0.988864
Coefficient of determination R^2	0.850271	Adjusted R^2	0.824560
F(17.99)	33.07029	p value for the test F	3.08e-33
Logarithm of credibility	-154.9329	Akaike's Inform. Criterion	345.8657
Bayes. Schwarz criterion	395.5849	Hannan-Quinn Criterion	366.0511

Model II: WLS estimation using 117 observations
13 cross-sectional data units were included
Dependent variable (Y): $BankLevyRev_{it}$
Weights based on per-unit error variances

Makroekonomiczne i sektorowe determinanty wpływów z opłaty bankowej w Unii Europejskiej

Streszczenie

Celem artykułu jest określenie istotności czynników oddziałujących na poziom wpływów z podatków bankowych oraz wpłat zasilających fundusze stabilizacyjne (łącznie te obciążenia określane są w artykule jako opłata bankowa). Wysunięto hipotezę, że poziom wpływów z opłaty bankowej zależy od determinant makroekonomicznych, sektorowych i społecznych, podczas gdy najważniejsze z nich są czynniki makroekonomiczne. Do modelu wybrano około 40 zmiennych zależnych, które mogą mieć wpływ na poziom dochodów państwa z opłaty bankowej. Powyższe zmienne zależne zostały sklasyfikowane w siedmiu kategoriach: gospodarka ogólna, internacjonalizacja, opodatkowanie dochodów, spółki z ograniczoną odpowiedzialnością, finanse publiczne, charakterystyka sektora bankowego oraz populacja. Te siedem kategorii zagregowano następnie w trzech grupach: czynniki makroekonomiczne, sektorowe i społeczne. Autorzy wykorzystali regresję panelową. Panel został zbudowany dla 13 państw UE i okresu dziewięcioletniego. Państwa członkowskie, które wprowadziły opłatę bankową po 2011 r. (np. Polska) lub wycofały się z niej przed 2019 r., zostały wyłączone z próby.

Analiza wykazała, że czynniki istotnie oddziałujące na poziom wpływów z opłaty bankowej miały głównie charakter makroekonomiczny (przede wszystkim są to: deficyt budżetowy, roczny dochód netto oraz konsumpcja gospodarstw domowych wyrażona jako procent PKB). Ważnymi determinantami przychodów państwa z tytułu opłaty bankowej są również: wielkość sektora bankowego mierzona jego sumą bilansową oraz rentowność sektora bankowego, odzwierciedlona w postaci wyniku przed opodatkowaniem działalności kontynuowanej. Jednocześnie badanie nie przynosi jednoznacznych wniosków na temat wpływu poziomu koncentracji sektora bankowego (mierzonego wskaźnikiem HHI) i jego płynności na poziom wpływów z opłaty bankowej. Wnioski z przeprowadzonego badania są użyteczne przede wszystkim dla rządów państw, które w oparciu o nie mogą opracowywać projekcje dochodów z opłat bankowych na podstawie prognoz dotyczących agregatów makroekonomicznych i wielkości sektora bankowego.

Niniejsze badanie jest pierwszą analizą szerokiego spektrum 40 potencjalnych czynników oddziałujących na wpływy z opłat bankowych, przeprowadzonych dla wszystkich państw UE stosujących w sposób ciągły w latach 2011–2019 rozwiązanie polegające na dodatkowym obciążeniu banków w postaci opłaty bankowej.

Słowa kluczowe: sektor bankowy, podatek bankowy, opłata bankowa