EVALUATION OF THE FINANCIAL TRANSACTION TAX IN THE LIGHT OF THE OPTIMAL TAXATION THEORY

Małgorzata Twarowska
Maria Curie Skłodowska University, Poland
m.twarowska@poczta.umcs.lublin.pl

Jolanta Szołno-Koguc
Maria Curie Skłodowska University, Poland
jszolno@hektor.umcs.lublin.pl

Abstract:
The aim of the research is to assess the proposal of the financial transaction tax according to the optimal taxation theory. The research is based on a comparative analysis of the characteristics of optimal taxation and the characteristic of the financial transaction tax. The assessment mainly considers objectives, efficiency, economic equality and costs of taxation. The optimal taxation theory is looking for a tax system, which is maximizing social welfare and minimizing the cost of the fiscal process. The analysis would verify whether the tax proposed by the European Commission has the optimal taxation features.

Keywords: finance, economy, optimal taxation, financial transaction tax

1. INTRODUCTION

As a result of the financial crisis and the ongoing debate concerning the financial sector taxation the European Commission in September 2011 proposed to introduce the EU-wide financial transaction tax (FTT). The objectives of the proposed FTT were (European Commission, 2011a, p. 2):
- to prevent the fragmentation of the Single Market that could result from numerous uncoordinated national approaches to taxing financial transactions,
- to ensure that the financial sector made a fair and substantial contribution to public finances,
- to discourage financial transactions which do not contribute to the efficiency of financial markets or of the real economy.

The lack of support from some countries caused that they could not reach unanimous agreement on a harmonised FTT for the entire EU. Nonetheless, a number of Member States expressed a strong willingness to go ahead with the FTT. On 14 February 2013, the European Commission tabled a proposal for a Council Directive implementing enhanced cooperation on a common FTT harmonised amongst eleven Member States and Council of the European Union adopted a decision about the requested enhanced cooperation on 22 January 2013 (Council of the European Union, 2013, p. 1). The UK has challenged the legality of the enhance cooperation, but this legal challenge has, however, no suspending effect.

The ongoing debate concerning FTT prompt to analyse whether the tax proposed by the European Commission has fulfilled the FTT objectives and the optimal taxation features. The aim of the research is to assess the proposal of the financial transaction tax according to the optimal taxation theory.

2. THEORETICAL BACKGROUND OF THE OPTIMAL TAXATION

2.1. The criteria to assess the tax system

Many economists throughout the ages have tried to define the good tax and tax system. Depending on a historical background and widely accepted mainstream economics, a consensus on the principles of taxation and assessment criteria of the tax system changed. Consequently, in the literature there are three mutually different approaches (Grądalski, 2006, pp.101-103):
1. Traditional – aiming at determining the general principles of taxation and tax systems assessment according to these principles.
2. Based on the optimal taxation theory – assessing tax systems from the point of view of maximizing welfare functions.
3. Based on institutional economics – according to which the best tax system allows to maximize tax revenue.

The 18th-century economist and philosopher A. Smith in "The Wealth of Nations" described the rules that should govern a rational system of taxation. He set down four general canons:
- every tax ought to be certain (the time of payment, the manner of payment, the quantity to be paid ought to be clear and plain to the contributor),
- every tax ought to be equity (the taxpayers should pay taxes in proportion to the to their respective abilities, that is, in proportion to the revenue),
- every tax ought to be levied in the manner or at the time, in which is most likely to be convenient for the contributor to pay it,
- every tax ought not to generate high cost of collecting the tax (good tax ought to keep out of the pockets of the people as little as possible over and above what it brings into the public treasury of the state).

Already then the researchers were interested in tax efficiency, while the most controversy aroused economic equality of taxation. The subsequent theories of economics added to the Smiths concept a series of detailed rules, and divided them into: fiscal, economic, economic equality and tax techniques (Dziemianowicz, 2007, pp. 72-73).

J. E. Stiglitz suggested five principles that in his opinion the good tax system ought to comply with (Stiglitz, 2004, p. 551):
- economic efficiency, according to which the tax system ought not to interfere with the efficient allocation of resources,

- simplicity of administration, according to which the tax system ought to be simple and relatively inexpensive to manage,
- flexibility, according to which the tax system ought to be able to respond automatically to changes in the economy,
- political responsibility, according to which the tax system ought to be transparent and the real tax burden easy to identify,
- economic equality, according to which the tax system ought to consider fairly and equitable the taxpayers.

According to Ch. Heady taxes should be analysed in terms of three criteria (Heady, 1993, p. 17):
- the need for taxes to be fair (although fairness means different things to different people),
- the need to minimise administrative costs,
- the need to minimise disincentive effects.

The basic criteria for the assessment the tax system should include efficiency, economic equality and simplicity of taxation. According to R. I. Dziemianowicz these three basic principles are universal and allow assessing both – a new and existing tax system (Dziemianowicz 2007, p. 74). However, economists point out that there is trade-off between efficiency and equity of taxation. During the analysis of the consequences of taxation it should be taken into account the losses of efficiency, which entail the taxes. Minimizing there loses in the criterion for making a decision about taxes (Nojszewska, 1996, p. 87).

2.2. The main assumptions of the optimal taxation theory

The optimal taxation theory was presented for the first time in 1971 (Mirrlees, 1971, pp. 175-208). The optimal taxation theory is derived directly from the normative tax theory, based on the assumption that (Dziemianowicz, 2007, p. 86):
1. The objective of society is to maximize the welfare.
2. The maximization of the social welfare occurs through utility maximization of the individual units.
3. The utility is the measurable set.

The purpose of optimal taxation theory is to find such a tax system, which in condition of fixed tax revenue, effectiveness and economic equality constraints, maximizes social welfare as well as minimizing the cost of taxation. The optimal taxation is based on the concept of utility. The social welfare could be defined as the sum of the utility of individual units and could be seen as an indicator of the well-being of society. However, social welfare is not necessarily seen as simply the sum of individual utilities; it can also depend on how equally these utilities are distributed. Level of the usability of these units is the result of the distribution of income between them, which is the result of a combination of efficiency and equity (Heady, 1993, p. 17).

As N. G. Mankiw said, the standard theory of optimal taxation assumes that a tax system should be chosen to maximize a social welfare function subject to a set of restrictions (Mankiw & Weinzierl & Yagan, 2009, p. 3). The optimal taxation theory assumes that the same amount of tax revenues could be achieved by using a variety of taxes, which, however, cause a variety of losses in welfare. The appropriate selection of the tax system structure maight aid in minimize the loss of prosperity (also excess burden of taxation). The optimal taxation theory assumes that the market is efficient in the meaning of the Pareto efficiency and taxes interfere that efficiency. The solution leading to maximize the welfare is neutral tax (first-best tax), or specified distorting tax (second-best) (Cieślukowski, 2012, p. 195).

3. ASSESSMENT OF THE FINANCIAL TRANSACTION TAX ACCORDING TO THE ASSUMPTION OF THE OPTIMAL TAXATION

3.1. The optimal financial transaction tax – research results

E. Dávila presented the optimal linear financial transaction tax in an equilibrium model of competitive financial markets. He showed, among othets, two main results of useing static model CARA utility, welfare analysis, numerial simulations, static extensions as well as dynamic model with general utility and arbitrary disagreement. First, the optimal financial tax is strictly positive. Even though introducing

a (small) transaction tax discourages all trades equally, the reduction in non-fundamental trading creates a first-order gain, while the reductionin fundamental trading creates a second-order welfare loss. Second, as long as investors' expectations are incorrect on average and financial markets determine investment and production, there exists an additional argument in favor of a higher or lower optimal tax. Through this mechanism, higher taxes are for instance optimal when investors are too optimistic on average at the same time that the demand side of the market is more price elastic than the supply side (Dávila, 2013, pp. 1, 53-54).

M. Cieślukowski also presented an analysis of the optimality of financial transaction tax, comparing the features of the FTT and the assumptions of the optimal taxation theory. Table 1 shows a comparison of the financial transaction tax proposed by the European Commission and the assumption of the optimal taxation theory.

Table 1: Comparison of the optimal taxation theory and financial transaction tax

Comparative criteria	Optimal taxation theory	Financial transaction tax
Objectives	Achievement of the efficiency, economic equality and minimizing the cost of fiscal process in the condition of fixed tax revenue	Achievement of the high fiscal efficiency (replacement of the Gross National Income – based own resource of the EU) as well as achievement of the economic efficiency and economic equality
Efficiency	Market efficiency within the meaning of Pareto: ▪ the best solution is the neutral tax (first-best): a lump-sum tax, consumption tax with a single rate, ▪ acceptable solution is specified distorting tax (second-best) characterized by relationship between efficiency and economic equality, among others: varied consumption taxes, low taxation of capital depending on the risk in the short and medium term and non-taxation of capital in the long term	Achievement of the efficiency by market mechanism adjustment: ▪ reduction of speculative transactions ▪ integration of the European capital market through the harmonization of financial transaction taxation in the member states ▪ tax burden differentiation depending on the types of financial instruments – higher taxation of transaction in securities (stocks and bonds) – 0,1% and lower taxation of derivative transactions – 0,01%
Economic equality	Horizontal rather than vertical equity	Social justice; financial transaction tax ought to increase the share of financial institutions in the costs of the financial crisis
Cost of fiscal process	Minimizing the cost of the fiscal process	The tax should generate a small part of the transaction costs

Source: Cieślukowski, 2012, p. 204.

The author concluded that FTT is not the optimal tax, but in my opinion, FTT has many features of the optimal taxation and meets a numerous of the assumptions, which is presented in the following sections.

3.2. The efficiency of the financial transaction tax

Economic efficiency, even though it is a key economic category, hasn't been unambiguously defined yet. Economists consider efficiency in three areas: allocation of resources, distribution of goods and services as well as functioning of enterprises. The economic efficiency should not be identified with effectiveness that can be achieved also by using inefficient methods (Wilkin, 1997, p. 25). In the analysis of the tax system the two terms should be distinguished: 1) tax efficiency (fiscal efficiency), which evaluates the performance of the different sources of tax revenue and 2) economic efficiency of taxation, which is related to social costs of taxation. Tax efficiency is related to the fiscal function of taxation. It could be defined as the ratio of revenue from taxes and the basic economic values, which can be considered as inputs. The concept of economic efficiency, in turn, is related to the optimal tax

system, in which the losses caused by taxes are as small as possible (Dziemianowicz, 2007, pp. 75-77). In conclusion, it could be said that the optimal taxation theory is not emphasized the fiscal efficiency as the main purpose. In the spotlight of this theory is the economic efficiency of taxation rather than tax efficiency (fiscal efficiency), although undoubtedly these two issues are closely related.
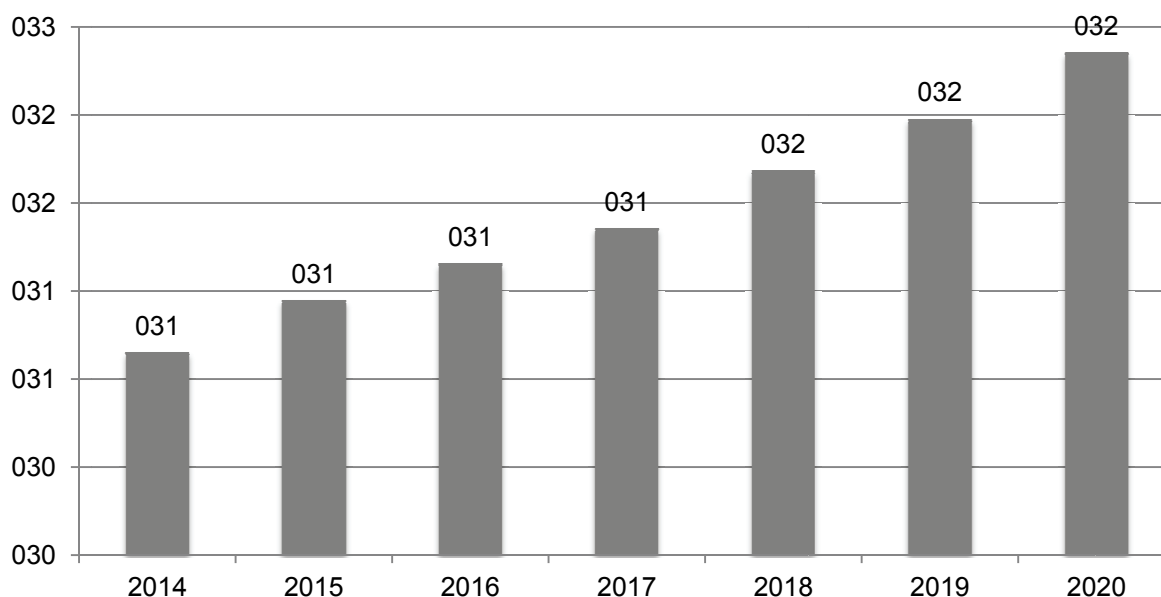
Table 2: Hypothetical EU budget revenue from FTT (in EUR million and share in %, current prices)

Description	2014	2015	2016	2017	2018	2019	2020
The estimated FTT revenue in EU budget	43692	45335	46801	48414	50175	52108	54226
EU total commitments appropriations (Financial Framework 2014-2020)	142540	146483	150217	154397	158365	162951	167602
FTT revenue share in EU total commitments appropriations (%)	30.65	30.95	31.16	31.36	31.68	31.98	32.35

Source: Own calculations based on: European Commission, 2011b, p. 20 and European Commission, 2013, p. 8.

Table 2 shows the European Commission's forecasts of the EU budget revenues from financial transaction tax and the share of FTT revenue in EU total commitments appropriations in 2014-2020. FTT, the new source of the EU budget revenue would be efficient. FTT revenue would grow in absolute values from EUR 43 692 million in 2014 to EUR 54 226 million in 2020 as well as FTT revenue share in EU total commitments from 30.65% in 2014 to 32.35% in 2020 (Figure 1). The efficiency of FTT would result from high value of financial instruments trading on the stock exchange of EU Member States.

Figure 1: The estimated FTT revenue share in EU total commitments appropriations in 2014-2020 (%)

Source: Own calculations based on: European Commission, 2011b, p. 20 and European Commission, 2013, p. 8.

S. Schulmeister, M. Schratzenstaller and O. Picek made estimation of hypothetical financial transaction tax receipts in the global economy (Table 3). According to the estimates FTT tax rate of just 0.01% would result in an annual global income of USD 234 billion and FTT tax rate of 0.1% would result in an annual global income of USD 734,8 billion, including USD 381.3 billion from the tax on exchange-based derivative transactions, USD 277.3 billion from tax on OTC transactions, and USD 76.2 billion from tax on spot transactions on exchanges. The highest revenue from FTT would come from Europe and North America.

Table 3: Hypothetical financial transaction tax receipts in the global economy (in USD bn)

Description	Tax rate	Spot transactions on exchanges	Derivatives transactions on exchanges	OTC transactions	All transactions
World	0.1	76.2	381.3	277.3	734.8
	0.05	40.0	281.1	208.0	529.1
	0.01	8.4	128.6	97.1	234.0
Europe	0.1	31.3	120.7	169.3	321.3
	0.05	16.3	89.5	127.0	232.8
	0.01	3.4	41.2	59.2	103.9
North America	0.1	31.9	223.2	58.4	313.6
	0.05	16.9	165.4	43.8	226.1
	0.01	3.5	76.1	20.4	100.1
Asia and Pacific	0.1	11.2	34.2	46.6	92.0
	0.05	5.9	24.0	34.9	64.8
	0.01	1.2	10.3	16.3	27.8
Other	0.1	1.7	3.2	3.0	7.9
	0.05	0.9	2.3	2.3	5.4
	0.01	0.2	1.0	1.1	2.2

Note: simulation was based on data from year 2008.
Source: Schulmeister, Schratzenstaller, Picek, 2008, p. 70.

The economic efficiency of taxation draws attention to the need to minimise disincentive effects, because the discouragement of work will distort the economy and lower people's utility and hence social welfare (Heady, 1993, p. 17). In evaluation of the optimality of financial transaction tax the reduction of transaction volume should be taken into account as a disincentive effect of the introduction of FTT (Table 4).

Table 4: Assumptions about transaction costs and the reduction of trading volume in response to the introduction of a transaction tax

Transactions	Transaction costs in %	Reduction of trading volume in % due to a transaction tax of		
		0.1%	0.05%	0.01%
Spot transactions on exchanges				
Stocks	0.300	10	5	0
Bonds	0.200	5	3	0
Exchange traded derivatives				
Stock index	0.005	70	60	20
Interest rates	0.003	80	70	30
Foreign exchanges	0.004	75	65	25
Commodities	0.005	70	60	20
OTC	0.003	80	70	30

Note: simulation was based on data from year 2008.
Source: Based on: Schulmeister, Schratzenstaller, Picek (2008, p. 48).

FTT would provide most of its objectives. The efficiency of FTT would be achieved by market mechanism adjustment:
- reduction of speculative transactions,
- integration of the European capital market through the harmonization of financial transaction taxation in the member states,
- tax burden differentiation depending on the types of financial instruments.

Financial transaction tax could help to create the conditions for more sustainable growth by contributing to fiscal consolidation and auxiliary resources as well as economic efficiency (European Commission, 2010a, p. 3).

3.3. The economic equality of the financial transaction tax

The idea of equality has been widely discussed, and is still a major part of the evaluation of taxation. However, Smith's idea of equality (tax payments in proportion to income) is not the only one that has received support. The administrative costs and the effects on incentives (the discouragement of business) have also been widely discussed (Heady, 1993, p. 16). Economic equality refers to distribution of income and wealth. This issue in the context of taxes could be summed up to a choice between horizontal and vertical equity. Horizontal equity is fulfilled if the similar entity (e.g. in terms of income, wealth, development) are treated the same. On the other hand, the vertical equity is fulfilled if the entities with greater income potential will carry relatively higher burden of taxation compared to entities with lower income potential (Stiglitz, 2004, pp. 565-568). According to Ch. Heady the social welfare decreases as inequality of utility increases. In this way, the concept of social welfare reflects one idea of fairness in the tax system: that taxes are fair if they reduce the degree of inequality (Heady, 1993, p. 17).

The economic equality of the FTT is reflected in social justice. FTT ought to increase the share of financial institutions in the costs of the financial crisis. There are arguments that the financial sector could make a fairer and more substantial contribution to government finances. European Commission argues that the financial sector is seen to bear an important responsibility for the occurrence and scale of the crisis and its negative effects on government debt levels worldwide. Additional taxes may also be justified by the fact that some governments provided substantial support to the sector during the crisis and it should hence make a fair contribution in return (European Commission, 2010a, p. 3).

Moreover, as European Commission pointed out, while the CIT does not seem to tax the financial sector lighter than other sectors, the VAT exemption of financial services might lead to a favourable tax treatment of the sector despite the fact that input VAT is not deductible for the sector. Since the adoption of the Sixth VAT Directive in 1977, the EU's common value added tax system has generally exempted mainstream financial services including insurances and investment funds. Article 135(1) of the VAT Directive provides an exemption from VAT for most financial and insurance services (European Commission, 2010b, p. 9).

However, there are doubts about the impact of FTT on the fair share of financial institutions in covering the costs of the financial crisis, as they may shift the tax burden on consumers. FTT is likely to involve some income redistribution from bank shareholders, managers or market participants to the general population. The tax burden is likely to be partly rolled over to clients and average customers, but it depends on the ability of taxpayers to avoid the tax and legal regulations (European Commission, 2010a, p. 5).

3.4. The cost of the financial transaction tax

In the literature there are different concepts of the costs of taxation. F. Grądalski specifies four segments of the costs associated with the imposition of taxes (Grądalski, 2006, p. 80):
- the tax burden resulting from the laws,
- the administrative costs of tax collection,
- the costs of tax payment borne by taxpayers,
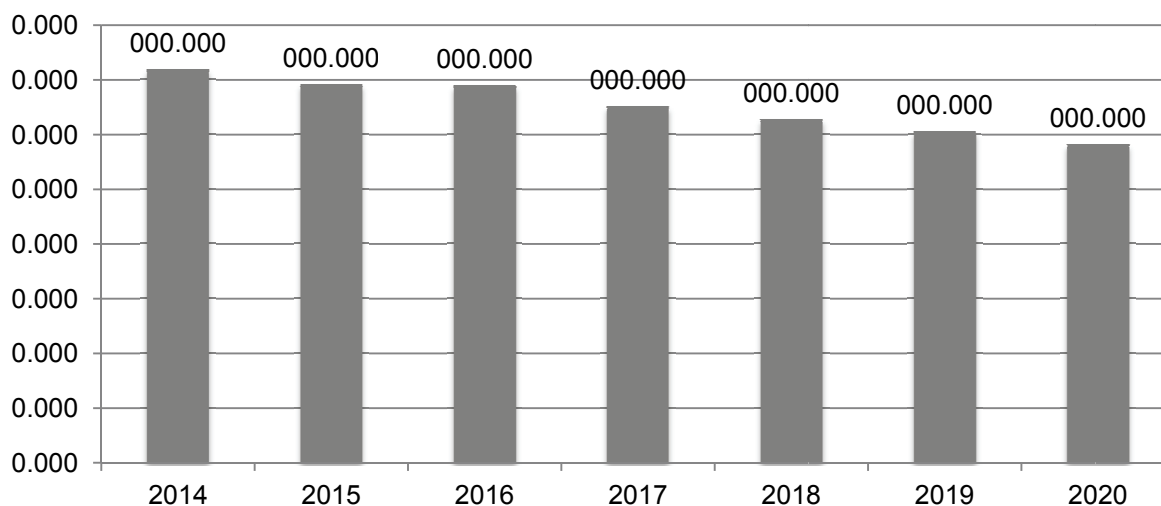- excess burden of taxation.

J. Slemrod and S. Yitzhaki divide the social costs of fiscal process into tax administration costs, tax adjustment costs and excess burden of taxation (Slemrod & Yitzhaki, 1996, pp. 172-198). According to Ch. Heady higher administrative costs will require a greater amount of gross tax revenue to be collected to finance government services, thus reducing individual utilities (Heady, 1993, p. 17).

Table 5: Administrative costs of FTT implementation (in EUR million and share in %, current prices)

Description	2014	2015	2016	2017	2018	2019	2020
The administrative costs of harmonization (implementation of the FTT Directive)	0.798	0.798	0.798	0.798	0.798	0.798	0.798
The costs of FTT collection	2.341	2.341	2.431	2.356	2.356	2.356	2.356
The total administrative costs of FTT implementation	3.139	3.139	3.229	3.154	3.154	3.154	3.154
The estimated FTT revenue in EU budget	43692	45335	46801	48414	50175	52108	54226
The total administrative costs of FTT share in the estimated FTT revenue (%)	0,0072	0,0069	0,0069	0,0065	0,0063	0,0061	0,0058

Source: European Commission, 2011a, p. 29, European Commission, 2011b, p. 16, 20.

Both in the optimal taxation theory and in FTT the important issue is the cost of fiscal process. Table 5 shows the estimated administrative costs of FTT implementations (costs of implementation of the FTT Directive and costs of the tax collection). The data contained in table 5 and figure 2 show that the administrative costs arising from the implementation of the FTT will be minor in relation to estimated revenue from FTT in EU and their share will decline in the following years.

Figure 2: The total administrative costs of FTT share in the estimated FTT revenue in 2014-2020 (%)

Source: European Commission, 2011a, p. 29, European Commission, 2011b, p. 16, 20.

It is worth noting that the administrative costs are only one part of the cost of fiscal process. Others, such as costs of tax payment borne by taxpayers, tax adjustment costs, excess burden of taxation as well as time required to pay the taxes are not easily measurable. Indirectly, the FTT would also increase the cost of capital for individual customers, companies and governments, but here is no available empirical evidence on the real incidence.

4. CONCLUSIONS

The optimal taxation theory is looking for a tax system, which is maximizing social welfare and minimizing the cost of the fiscal process. As emphasized by the A. B. Atkinson and J. E. Stiglitz the optimal taxation theory does not lead to clear conclusions (Atkinson & Stiglitz, 1980, chapter 12-5). However, the assumptions of the optimal taxation theory enable the assessment of the taxation.

The analysis allows drawing the following conclusions. Firstly, FTT would provide most of its objectives. The efficiency of FTT would be achieved by market mechanism adjustment: reduction of speculative transactions, integration of the European capital market through the harmonization of

financial transaction taxation in the member states and tax burden differentiation depending on the types of financial instruments. FTT, the new source of the EU budget revenue would be efficient. The efficiency of FTT would result from high value of financial instruments trading on the stock exchange of EU Member States.

Secondly, the economic equality of the FTT is reflected in social justice. FTT ought to increase the share of financial institutions in the costs of the financial crisis and make a fairer and more substantial contribution to government finances. However, there are doubts about the impact of FTT on the fair share of financial institutions in covering the costs of the financial crisis, as they may shift the tax burden on consumers. The reasons for implementing FTT is also the preferential treatment of the financial sector in terms of VAT, as the majority of financial services in the EU are exempt from VAT.

Thirdly, both in the optimal taxation theory and in FTT the important issue is the cost of fiscal process. The administrative costs arising from the implementation of the FTT will be minor in relation to estimated revenue from FTT in EU and their share will decline in the following years. However, the administrative costs are only one part of the cost of fiscal process. Others, such as costs of tax payment borne by taxpayers, tax adjustment costs, excess burden of taxation as well as time required to pay the taxes are not easily measurable.

The financial transaction tax has many features of the optimal taxation and meets a numerous of the assumptions, however it can't be concluded that FTT fully satisfy all the assumptions.

REFERENCE LIST

1. Atkinson, A. B. & Stiglitz, J. E. (1980). *Lectures on Public Economic.* McGraw-Hill, New York.
2. Cieślukowski, M. (2012). *Europejski podatek od transakcji finansowych w świetle teorii optymalnego opodatkowania*. In M Hybka, & T. Juja (Ed.), *Studia z zakresu finansów i polityki podatkowej*. "Zeszyty Naukowe 232", Wydawnictwo Uniwersytetu Ekonomicznego w Poznaniu.
3. Council of the European Union (2013). *Financial transaction tax: Council agrees to enhanced cooperation.* Press release. Brussels, 22 January 2013.
4. Dávila, E. (2013). *Optimal Financial Transaction Taxes.* Job Market Paper. Retrieved from http://scholar.harvard.edu/edavila/research (03.02.2015).
5. Dziemianowicz, R. I. (2007). *Efektywność systemu opodatkowania rolnictwa.* Białystok.
6. Grądalski, F. (2006). *System podatkowy w świetle teorii optymalnego opodatkowania.* Warsaw School of Economics, Warsaw.
7. Heady, Ch. (1993). *Optimal Taxation as Guide to Tax Policy: A Survey.* Fiscal Studies Vol. 14, No. 1.
8. European Commission. (2010a). *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. Taxation of the Financial Sector.* COM(2010) 549 final
9. European Commission. (2010b). *Taxation papers. Financial sector taxation*. Working Paper No. 25.
10. European Commission. (2011a). *Proposal for a Council Directive on a common system of financial transaction tax and amending Directive 2008/7/EC,* Brussels, COM(2011) 594 final.
11. European Commission. (2011b). *Proposal for a Council Regulation on the methods and procedure for making available the own resource based on the financial transaction tax,* Brussels, COM(2011) 738 final.
12. European Commission. (2013). *Multiannual financial framework 2014-2020 and EU budget 2014. The figures.* Retrieved from http://ec.europa.eu/budget/mff/figures/index_en.cfm.
13. Mankiw, G. N., & Weinzierl, M., & Yagan, D. (2009). *Optimal taxation in theory and practice*. National Bureau of Economic Research Working Paper No. 15071. Retrieved from http://www.nber.org/papers/w15071.pdf (03.02.2015).
14. Mirrlees, J. A. (1971). *An Exploration in the Theory of Optimum Income Taxation.* In *Review of Economic Studies,* Vol. 38, No. 2.
15. Nojszewska, E. (1996). *Optymalne opodatkowanie – podstawy teoretyczne.* Roczniki Kolegium Analiz Ekonomicznych No. 3/1996. Szkoła Główna Handlowa.
16. Schulmeister, S., & Schratzenstaller, M., & Picek, O. (2008). *A General Financial Transaction Tax: Motives, Revenues, Feasibility and Effects*. Oesterreichisches Institut fuer Wirtschaforschung Working Paper, Vienna.

17. Stiglitz, J. E. (2004). *Ekonomia sektora publicznego.* Wydawnictwo Naukowe PWN, Warszawa.
18. Szołno-Koguc, J., & Twarowska, M. (2014). *Taxation of the financial sector in the European Union – an attempt to find the best solution.* Journal of Economics & Management, No. 18/2014. Retrieved from http://www.ue.katowice.pl/jednostki/wydawnictwo/journal-of-economics-and-management/jem-1-30/18-1.html (06.03.2015).
19. Wilkin, J. (1997). *Efektywność a sprawiedliwość.*Wydawnictwo Key Text, Warszawa.