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Fiscal and Financial Stability and Current Challenges to Economic Development

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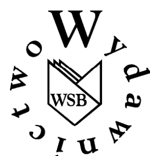
Wyższej Szkoły Bankowej w Poznaniu
2017, t. 77, nr 6

Stabilność podatkowa i finansowa wobec aktualnych wyzwań rozwoju gospodarki

redakcja naukowa
Beata Zofia Filipiak, Marek Dylewski



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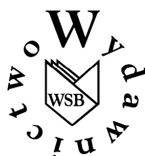
edited by

Beata Zofia Filipiak, Marek Dylewski



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Preface

Fiscal stability is increasingly seen as one of the most important features of the economy, affecting the ability to conduct effective anti-cyclical fiscal policies and the central bank's ability to effectively pursue independent monetary policy. The recent financial and economic crisis has shown the need for new tools, methods and ways of stimulating economic growth and maintaining balance in the economic system.

In addition to fiscal sustainability, the financial sector needs financial stability; otherwise, governments in many countries have to take extraordinary actions and apply non-standard instruments to counteract the effect of financial instability. This generally negatively affects fiscal sustainability, but also the functioning of financial institutions and enterprises in the micro and macro environment. Although such measures may decrease the effects of an economic crisis or an instability of the domestic market, they may have a negative impact on the functioning of the state itself and on adopted directions of sustainable development. Aid packages and stabilization measures will always imply an increase in budget deficits and the value of public debt.

Studies included in this publication address fiscal, monetary and financial problems directly in the context of changes in the macro and micro environment, seeking methods, tools and instruments to influence fiscal and financial sustainability. Identified problems are covered in three parts, focusing on the following issues:

1. Fiscal Stability – General Issues,
2. Current Challenges to Fiscal Stability,
3. Selected Issues Shaping Fiscal and Financial Stability.

In the first part, the authors present the full-money-idea. This problem is discussed as a necessary measure to give more security to the actual money system. The harmonization of taxes is a very important issue. Only with a fully harmonized EU corporation tax will it be ultimately possible to meet the fundamental

principle of tax law – the principle of fiscal justice – and the closely connected fiscal principle as well as the efficiency principle.

In the second part, the authors discuss current problems of the fiscal system. The approach proposed in this part features a multi-faceted analysis of fiscal policies ranging from tax planning problems, through corporate taxation to tax policy problems of local authorities.

The last part is devoted to factors affecting fiscal and financial stability. The authors discuss such issues as state debt, financial management methods and instruments (as a tool to support stability), and financial market instruments.

Realizing that this work does not exhaust all problem, we hope it will be a voice in the ongoing theoretical and pragmatic discussion.

Prof. Beata Zofia Filipiak, PhD
Marek Dylewski, PhD, Associate Professor

Fiscal Stability – General Issues

Zeszyty Naukowe
Wyższej Szkoły Bankowej w Poznaniu
2017, t. 77, nr 6

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Die Vollgeld-Idee

Zusammenfassung. *Die Voll-Geld-Idee wird als notwendige Maßnahme diskutiert, um dem eigentlichen Geldsystem mehr Sicherheit zu geben. Vor allem in der Schweiz gibt es eine intensive Diskussion. Ein Referendum im Jahr 2018 ist geplant, um eine politische Grundlage für die Realisierung von Vollgeld zu finden. Die Full-Money-Idee wird auch Full-Reserve-System genannt, weil Kreditinstitute hundert Prozent ihrer Kredite als Reserve-Geld von der Zentralbank halten müssen. Diese Idee gibt nur einem von vier Teilen des Geldsystems mehr Sicherheit. Die Geldmenge soll mehr direkt variieren und weniger durch Zinsschwankungen als im eigentlichen Geldsystem. Es ist seit Friedman bekannt, dass die direkte Veränderung der Geldmenge erfolgreicher ist, um eine Wirtschaft zu kontrollieren. Die Full-Money-Idee basiert nicht auf einer neuen Geldtheorie und bietet nur mehr Anreize, um eines der Ziele des Geldsystems (Geldpolitik) zu erreichen.*

Schlüsselwörter: *Vollgeld, Geld- und Währungstheorie, Geld- und Währungspolitik, Geldmengensteuerung, Geldwertstabilität, Geldsystem*

1. Einleitung

Krisen werfen immer wieder die Frage nach einem neuen Geldsystem bzw. einer neuen Geldordnung auf. Es gilt Schwächen des aktuellen Geldsystems zu identifizieren und Mechanismen zur Verhinderung erneuter Krisen zu entwickeln. Die Literaturanalyse belegt die Existenz einer Vielzahl von Diskussionsbeiträgen. Im Vordergrund der Diskussion steht die Schaffung einer anderen Art von Geld.

Es wird u.a. neutrales Geld, Vollgeld, souveränes Geld und Freigeld vorgeschlagen. In diesem Rahmen soll vor allem der Vorschlag Vollgeld zu schaffen, erörtert werden.

Voraussetzungen für die Erörterung sind ein Begriffssystem und ein Zielsystem, damit die Erörterung festgelegte Bezugspunkte hat und nicht im undefinierten Raum „verendet".

Im Bereich des Begriffssystems sollen drei grundlegende Begriffe festgelegt werden. Das sind die Begriffe Geldordnung, Geldsystem und Geld. Analog dem Begriff Wirtschaftsordnung ist eine Geldordnung eine theoretische Vorstellung, die nicht in die Realität umgesetzt wurde. Analog zum Begriff Wirtschaftssystem ist ein Geldsystem in der Realität verwirklicht. Es hat also eindeutigen Praxisbezug. Geld ist ein Gut, das geschaffen wurde, um die Transaktion anderer Güter am Markt zu erleichtern. Geld soll drei Funktionen erfüllen. Es sollte nach geltender Auffassung Recheneinheit, Zahlungsmittel und Wertaufbewahrungsmittel sein. Auf der Suche nach einer Krisenverhinderung ist also ein alternatives Geldsystem zu finden, indem Geld bestimmte Funktionen erfüllt. Ob alle drei genannten Funktionen auch weiterhin zu berücksichtigen sind, wird die Diskussion zeigen müssen.

Im Bereich Zielsystem sind zumindest die folgenden drei Ziele zu berücksichtigen: (1) Versorgung der Märkte mit der notwendigen Geldmenge, um alle gewünschten Transaktionen (Käufe und Verkäufe von Gütern) abwickeln zu können (Funktionsfähigkeit der Märkte, Effektivität der Geldpolitik), (2) Steuerung der Wirtschaft ohne Inflation und Deflation (Krisen), damit der Wert des Geldes erhalten bleibt (Geldwertstabilität) und (3) Effizienz des Geldsystems, so dass die angestrebten Ziele mit minimalen Kosten erreicht werden (Effizienz des Systems).

Auf der Basis dieser Abgrenzungen soll die Vollgeld-Idee auf die Fähigkeit der Krisenverhinderung unter Erfüllung der genannten Ziele überprüft werden. Soweit es angebracht erscheint, ist auch auf andere alternative Krisenverhinderungsvorschläge einzugehen. Ausgangspunkt der Diskussion ist das aktuelle Geldsystem, die Identifizierung von Schwachpunkten und das Aufzeigen von Verbesserungsvorschlägen. Dabei stehen die Verbesserungsvorschläge der Vollgeld-Idee im Vordergrund.

Unter Vollgeld wird Geld verstanden, dass nicht von den Kreditinstituten, sondern nur vom Staat bzw. einer staatlichen Institution (Zentralbank) geschöpft wird. Den Kreditinstituten wird die Möglichkeit genommen, Buchgeld zu schöpfen. Zudem dürfen die Kreditinstitute nicht mehr über die Sichtguthaben ihrer Kunden verfügen. Die Sichtguthaben müssen durch Bargeld bei den Kreditinstituten oder als Zentralbankgeld bei der Zentralbank gedeckt sein. Die Kreditinstitute dürfen das Eigentum der Kunden (die Sichtguthaben und das Zentralbankgeld) nicht in ihre Bilanz aufnehmen.

2. Struktur des aktuellen Geldsystems

Das in Abb. 1 dargestellte Geldsystem kann in vier Teilbereiche (-kreisläufe) eingeteilt werden. Alle vier Teilbereiche sind auf ihre Funktionsfähigkeit hinsichtlich der Realisierung der drei (s.o.) gesetzten Ziele zu überprüfen, um eventuelle Schwachpunkte aufzuzeigen.

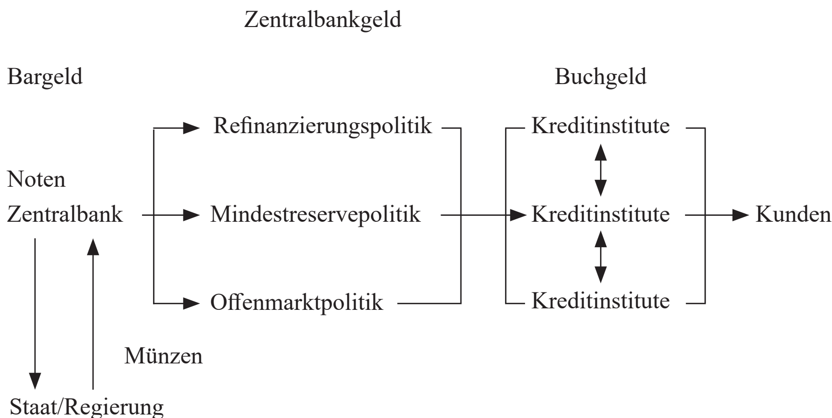

Abb. 1. Struktur des aktuellen Geldsystems (ohne Außenwirtschaftsbeziehungen)

Quelle: eigene Darstellung.

Den ersten Teilbereich des Geldsystems stellt die Beziehung zwischen dem Staat bzw. der Regierung und der Zentralbank (Notenbank) dar (vgl. Abb. 1). Der Staat lässt den Teil des Geldes prägen, der als Münzen bezeichnet wird. Der Staat bringt die Münzen nicht selbst in Umlauf, sondern verkauft sie für den Nennbetrag an die Zentralbank.[1] Die Zentralbank lässt den zweiten Teil des Geldes drucken, die Scheine bzw. Noten (Banknoten).[2] Münzen und Noten zusammen bilden das Bargeld. Das Bargeld wird in diesem Stadium auch Zentralbankgeld (Basisgeld, Geldbasis) genannt. Es wird von der Zentralbank in Umlauf gebracht. Die Zentralbank, die in ihrer Politik unabhängig von der Regierung ist, aber die Politik der Regierung zu beachten hat, kauft nicht nur die Münzen von der Regierung, sondern überweist der Regierung (dem Staat) den Rest ihres Gewinns, der nicht für die gesetzliche Rücklage verwendet wird.[3]

[1] Vgl. Münzgesetz (MünzG) vom 16. Dezember 1999 (BGBl. I S. 2402), § 1 und 7.

[2] Vgl. Gesetz über die Deutsche Bundesbank (BbankG) in der Fassung der Bekanntmachung vom 22. Oktober 1992 (BGBl. I S. 1782), das zuletzt durch Artikel 9 des Gesetzes vom 22. Dezember 2011 (BGBl. I S. 2959) geändert worden ist, § 14.

[3] Vgl. Gesetz über die Deutsche Bundesbank... § 27.

Den zweiten Teilbereich des Geldsystems bilden die Beziehungen zwischen der Zentralbank und den Kreditinstituten. Die Kreditinstitute benötigen Geld, um Kredite an ihre Kunden vergeben zu können. Dieses Geld besorgen sich die Kreditinstitute bei der Zentralbank. Es handelt sich dabei um Zentralbankgeld in Form vom Bargeld, das sich aus Noten und Münzen zusammensetzt. Der Vorgang der Geldbeschaffung der Kreditinstitute bei der Zentralbank wird auch als Geldschöpfung von Zentralbankgeld (Bargeldschöpfung) bezeichnet.

Um die Beziehungen zu den Kreditinstituten zu regeln, stehen der Zentralbank die drei Instrumente Refinanzierungspolitik, Mindestreservepolitik und Offenmarktpolitik zur Verfügung.[4] Mit diesen Instrumenten muss die Zentralbank die Ziele der Geldpolitik (s.o.) verwirklichen.

Die Kreditinstitute müssen sich für die Vergabe von Geldkrediten (nicht für Avalkredite wie Bürgschaften) refinanzieren, da Buchgeld und (seltener) Bargeld abfließt. Für die Refinanzierung gibt es für die Kreditinstitute verschiedene Möglichkeiten. In diesem Rahmen wird nur der zweite Teilbereich des Geldsystems betrachtet, so dass lediglich die Refinanzierung bei der Zentralbank zu behandeln ist. Für die Steuerung der Refinanzierung der Kreditinstitute bei der Zentralbank betreibt die Zentralbank eine Refinanzierungspolitik. Für die für die Kreditinstitute zur Refinanzierung zur Verfügung gestellten Kredite verlangt die Zentralbank Zinsen. Diese Zinsen variiert die Zentralbank in Abhängigkeit der Wirtschaftslage. Die Senkung der Zinsen führt zu einer erhöhten Refinanzierung der Kreditinstitute, die dann wiederum mehr Kredite zu niedrigeren Zinsen an die Kunden vergeben können. Die Zentralbank unterstellt, dass so – über ihren indirekten Einfluss - die Wirtschaft angekurbelt wird. Entsprechend soll eine Erhöhung der Zinsen für die Refinanzierung die Wirtschaft bei überhitzter Konjunktur abbremsen.

Die Mindestreservepolitik ist das zweite Instrument der Zentralbank zur Steuerung des Kreditvergabeverhaltens der Kreditinstitute und damit der Wirtschaft. Die Kreditinstitute sind per Gesetz angehalten für bestimmte Zahlungsverpflichtungen (Verbindlichkeiten, Einlagen), die sie eingegangen sind, bei der Zentralbank einen bestimmten Prozentsatz (Mindestreservesatz) als Mindestreserve zu halten. Die Mindestreserve kann verzinst (EZB) oder nicht verzinst (früher Deutsche Bundesbank) werden. Ziel der Mindestreserve ist es, die Zahlungsfähigkeit der Kreditinstitute zu sichern. Die Mindestreservepolitik der Zentralbank hat zwei Wirkungen. Eine Erhöhung des Mindestreservesatzes schränkt die Möglichkeit der Kreditinstitute ein, Kredite zu vergeben und damit Buchgeld zu schöpfen. Die Zentralbankgeld- und die Geldmenge werden vermindert, so dass die Zinsen- und das Preisniveau steigen. Eine Senkung des Mindestreservesatzes hat

[4] Das vierte geldpolitische Instrument einer Zentralbank, die Devisenpolitik, wird in diesem Rahem nicht betrachtet.

die umgekehrten Wirkungen. Es kann somit die Preisniveaustabilität beeinflusst werden.

Als drittes Instrument steht einer Zentralbank die Offenmarktpolitik zur Verfügung. Die Zentralbank kauft Wertpapiere von den Kreditinstituten gegen Zentralbankgeld bei variablem Zinssatz. Das Zentralbankgeld können die Kreditinstitute für ihre bei der Zentralbank zu haltenden Mindestreserven nutzen. Die Kreditinstitute haben somit mehr Zentralbankgeld und können mehr Kredite an die Kunden vergeben. Umgekehrt kann die Zentralbank auch Wertpapiere an die Kreditinstitute verkaufen. Dadurch vermindert sie die Zentralbankgeldmenge und die Möglichkeit der Kreditinstitute Kredite an die Kunden zu vergeben.

Die Offenmarktpolitik ist ein wichtiges Instrument der Refinanzierung, das durch unterschiedliche Fristigkeiten der Offenmarktgeschäfte zur Grobsteuerung und Feinsteuerung der Geldmenge geeignet ist. Die Offenmarktpolitik ist aber auch ein Instrument zur Beeinflussung der Zinssätze, da die Zinssätze zu denen die Zentralbank Wertpapiere kauft und verkauft sehr starken Einfluss auf die Zinssätze der Kreditinstitute bei Geschäften mit den Kunden und anderen Kreditinstituten haben.

Der dritte Teilbereich des Geldsystems umfasst die Beziehungen zwischen den Kreditinstituten und den Kunden. Die Kunden können bei den Kreditinstituten einerseits Geld einzahlen (Einlagen) und anderseits Geld ausleihen (Kredite). Für Einlagen zahlen die Kreditinstitute Zinsen an die Kunden (Habenzinsen). Für Kredite verlangen die Kreditinstitute von den Kunden Zinsen (Sollzinsen). Die Habenzinsen sind niedriger als die Sollzinsen, so dass die Kreditinstitute einen Gewinn erzielen können.

Um Kredit bei den Kreditinstituten zu bekommen, müssen die Kunden Sicherheiten bieten. Sie müssen über Vermögenswerte (Grund- und Boden, Immobilien, Forderungen gegen andere Kunden und/oder Kreditinstitute) verfügen, die als Sicherheit akzeptiert werden. Mit dem per Kredit erhaltenen Geld (Bargeld oder Buchgeld) können die Kunden gegen sie bestehende Forderungen bezahlen.

Im vierten Teilbereich des Geldsystems sind die Beziehungen zwischen den Kreditinstituten zu betrachten. Die Kreditinstitute geben sich bei Bedarf gegenseitig Kredite.

3. Schwachpunkte des aktuellen Geldsystems

Der erste Teil des Geldsystems weist einen Schwachpunkt auf. Die Regierung kann beliebig viele Münzen prägen und die Zentralbank beliebig viele Noten drucken lassen. Daraus ergibt sich, dass im Zweifelsfall die Geldmenge beliebig ausgedehnt und nicht begrenzt werden kann. Für eine Krisenverhinderung ist dieser Tatbestand nicht hilfreich.

Die Schwachpunkte im zweiten Teilbereich des Geldsystems liegen in der Steuerung der Wirtschaft über die Aktivitäten der Kreditinstitute durch die Zentralbank und im Insolvenzrisiko der Kreditinstitute. Die Zentralbank soll gemäß der monetaristischen Geldtheorie die Aktivitäten der Kunden über die Kreditinstitute durch Veränderungen der Geldmenge steuern. Der Grund dafür ist die von Friedman und Schwartz [1963: 676-700; Friedman 1965: insbes. 189-209, 189-203; Friedman 1961: 447-466] empirisch ermittelte lange Reaktionszeit der von Keynes [2009: 46, 55, 65, 77 ff., 140 ff] befürworteten Zinssteuerung. Die Zinssteuerung kann aufgrund der Zeitverzögerung (time-lags) der gewünschten Reaktion pro- statt antizyklisch wirken. Die Wirtschaft wird somit in die falsche (nicht erwünschte) Richtung gesteuert. Dadurch, dass mittlerweile die zinsbasierte Offenmarktpolitik zum Hauptinstrument der Europäischen Zentralbank (EZB) und damit zum wichtigsten geldpolitischen Instrument im Europäischen System der Zentralbanken (ESZB) wurde, wird die Wirtschaft zu einem großen Teil über die Zinsen gesteuert. Diese Tatsache ist nicht unbedingt mit den Erkenntnissen von Friedman und Schwartz vereinbar. Mit anderen Worten, die aktuelle Geldpolitik kann bei der Steuerung der Wirtschaft nicht so erfolgreich sein, wie es die monetaristische Theorie anstrebt.

Ein schwerwiegender Kritikpunkt im zweiten Teilbereich des aktuellen Geldsystems ist zudem das Insolvenzrisiko der Kreditinstitute. Wenn viele Kunden ihre Kredite nicht zurückzahlen können und insolvent werden, besteht auch die Gefahr, dass Kreditinstitute selbst in Insolvenz gehen. Ist die Zahl der insolventen Kreditinstitute zu groß, so droht ein Zusammenbruch der gesamten Wirtschaft.

Schwachpunkt im dritten Teilbereich des Geldsystems sind die Sicherheiten. Sie können ihren Wert ganz oder teilweise verlieren, so dass der Kunde den Kredit (einschließlich vereinbarter Zinsen) an das Kreditinstitut nicht oder nur teilweise zurückzahlen kann. Es liegt ein Kreditausfall vor. Wenn die Kreditinstitute das Kreditausfallrisiko falsch eingeschätzt haben und zu viele Kredite ausfallen, droht den Kreditinstituten genau wie den Kunden die Insolvenz.

Die Befürworter der Vollgeld-Idee sehen weitere Kritikpunkte hinsichtlich der Möglichkeit der Kreditinstitute Buchgeld zu schöpfen. Die durch Gesetz bestimmten Institutionen, um Geld zu schöpfen, sind der Staat bzw. die Regierung sowie die Zentralbank. Durch die Schöpfung von Buchgeld durch die Kreditinstitute wird die ausschließliche Geldschöpfung der staatlichen Institutionen durchbrochen und zum Teil in private Hände gegeben. Damit erschwert sich die Geldmengensteuerung der Zentralbank. Sie wird komplizierter, aber nicht unmöglich. Vermutlich wird sie aber ungenauer. Die Befürworter der privaten Geldschöpfung argumentieren gegen eine staatliche Geldschöpfung, da sie in einer auf Privateigentum ausgelegten Marktwirtschaft einen zu großen Einfluss des Staates auf die Wirtschaft kritisieren. Damit ergibt sich die Frage, wer soll die Wirtschaft steuern. Im aktuellen Geldsystem, das auf der Theorie „mainstream economics“

basiert, kommt die Steuerung der Wirtschaft der Zentralbank über die Geldmenge unterstützt durch die Zinspolitik zu. Durch die Buchgeldschöpfung der Kreditinstitute wird diese Steuerung zu einem nicht unerheblichen Teil von der Zentralbank zu den Kreditinstituten verlagert. Dies gilt vor allem, da der Anteil des Buchgeldes an der gesamten Geldmenge M_3 deutlich größer ist als der Bargeldanteil (ca. 90 Prozent Buchgeld und 10 Prozent Bargeld) [Witte 2015: 157].

Die Vollgeld-Verfechter sehen zudem durch die Beschränkung der Geldschöpfung auf die Zentralbank, die Möglichkeiten die Gewinnmaximierung der Kreditinstitute zu begrenzen und die Gewinne zur Zentralbank zu verlagern. Damit kommen ihrer Meinung nach die Gewinne dem Bürger zu Gute. Die Zentralbank muss einen Teil ihrer Gewinne an die Regierung abführen. Die Regierung kann damit u.a. Sozialpolitik oder Schuldenabbau betreiben. Es gibt nur kein Gesetz das sie dazu verpflichtet. Die Regierung kann auch Investitionen in die Infrastruktur vornehmen etc.

Der von den Befürwortern der Vollgeld-Idee gemachte Vorwurf, dass im aktuellen Geldsystem die Kreditinstitute Werte in ihre Bilanzen aufnehmen, die nicht in ihrem Eigentum stehen, sondern sich nur in ihrem Besitz befinden, ist nicht zu entkräften. Diesbezüglich bedarf es einer Neuregelung in den Bilanzrichtlinien. Vollgeld ist dazu nicht unbedingt notwendig.

Der Schwachpunkt im vierten Teilbereich des Geldsystems ist die Insolvenz eines Kreditinstituts. Es kann seine bei anderen Kreditinstituten aufgenommenen Kredite nicht mehr bedienen. Es kommt bei einer Häufung solcher Fälle zu einem Domino-Effekt. Auch andere Kreditinstitute gehen in Insolvenz. Das gesamte Geldsystem ist dadurch in Gefahr und kann seine Funktionsfähigkeit verlieren. Damit ist aber auch das gesamte Wirtschaftssystem in Gefahr und kann zusammenbrechen.

4. Eine mögliche Veränderung des aktuellen Geldsystems

Die Vertreter der Vollgeld-Idee wollen das aktuelle Geldsystem verändern, um einige der aufgezeigten Schwachpunkte zu beheben. Zentraler Punkt der Vollgeld-Idee ist die Vermeidung des Insolvenzrisikos der Kreditinstitute. Die Kreditinstitute sollen dazu die vergebenen Kredite durch eine hundertprozentige Hinterlegung der Kreditsumme bei der Zentralbank absichern. Man spricht daher nicht nur von der Vollgeld-Idee, sondern auch vom Voll-Reservesystem.

Die hundertprozentige Hinterlegungspflicht der Kreditinstitute für vergebene Kredite hat verschiedene Wirkungen. Zunächst wird das Interesse der Kreditinstitute zur Vergabe von Krediten gesenkt. Die Auswirkung ist eine Begrenzung bzw. Reduzierung der Buchgeldschöpfung durch die Kreditinstitute. Zudem wird eine Verlagerung der Gewinne aus der Kreditvergabe von den Kreditinstituten zur

Zentralbank bewirkt. Den Kreditinstituten wird das Hauptinstrument zur Gewinnerzielung genommen. Ferner wird der Abbau des Insolvenzrisikos der Kreditinstitute erreicht. Die hundertprozentige Hinterlegung von vergebenen Krediten bedeutet die Schaffung von hundert Prozent Eigenkapital.

Mit der hundertprozentigen Hinterlegungspflicht der Kreditinstitue für die vergebenen Kredite würde zudem in der aktuellen Geldpolitik der Europäischen Zentralbank eine Schwerpunktverlagerung vom geldpolitischen Instrument Offenmarktpolitik zum Instrument „Mindestreservepolitik" erfolgen. Damit bekäme auch die Geldmengensteuerung gegenüber der Zinssteuerung wieder mehr Gewicht. Zum Ziel der Geldwertstabilität würde wieder mehr Zielbeitrag geleistet als es die aktuelle Mischung von Geldmengen- und Zinssteuerung kann.

Die Reduzierung der Buchgeldschöpfung durch die Kreditinstitute halten die Vertreter der Vollgeld-Idee für notwendig, da im aktuellen Geldsystem die Buchgeldmenge deutlich größer ist als die Bargeldmenge.[5] Eine Geldmengenregel, die ein bestimmtes Verhältnis von Buch- zu Bargeld festlegt, wird hingegen nicht gefordert. Sie wäre aber sicherlich noch aufzustellen und zu begründen.

Die Verlagerung wirtschaftlicher Aktivitäten von der Privatwirtschaft zum Staat (bzw. zu einer staatlichen Institution) findet sicherlich bei den Bürgern Anklang, die den Staat in der Handlungspflicht sehen. Anders ist es bei den Bürgern, die den Gedanken einer Marktwirtschaft mit Privateigentum und Privatinitiative vertreten.

Auch die Gewinnverlagerung von den Kreditinstituten zur Zentralbankwird nicht alle Bevölkerungsschichten überzeugen. Die Bürger, die den Staat in der Verantwortung sehen, befürworten sicherlich eine Steigerung der Einkünfte des Staates sowie einen Abbau der bestehenden Staatsverschuldung. Die Kritik des Gewinnmaximierungsprinzips muss damit nicht zwangsläufig verbunden sein.

5. Die Durchsetzbarkeit der vorgeschlagenen Veränderung des aktuellen Geldsystems

Die Vollgeld-Idee ist zweifelsohne keine Utopie und durchsetzbar. Die Schweizer Vollgeld-Initiative [Verein Monetäre Modernisierung 2013] will dies mit einem Referendum im Jahr 2018 beweisen. Die Durchsetzung der Vollgeld-Idee und der damit verbundenen Veränderung des aktuellen Geldsystems bedarf lediglich der Änderung bestehender Gesetze. Diese Gesetzesänderung ist möglich, wenn die demokratische Mehrheit dazubereit ist. Die Meinung der demokratischen Mehrheit muss sich nicht unbedingt mit der Meinung der wissenschaftlichen Theorien zugewandten Bürgern decken.

[5] Zum aktuellen Verhältnis von Buch- zu Bargeld vgl. Tabelle 1 im Anhang.

Die Beschaffung der demokratischen Mehrheit ist von der Überzeugungsleistung der Vollgeld-Vertreter abhängig. Sie müssen die Bürger bzw. die Wähler und den Gesetzgeber von ihrer Idee überzeugen. Aber auch die Kritiker der Vollgeld-Idee sollten das demokratische Instrumentarium nutzen, um ihre Gegenmeinung durchzusetzen.

6. Schlussbemerkungen

Die Vollgeld-Idee fordert einen Teilbereich, den Bereich zwischen der Zentralbank und den Kreditinstituten, aktueller Geldsysteme zu verändern. Eine Verbesserung der Geldtheorie und -politik bzw. der Geldmengensteuerung liegt dieser Idee nicht zu Grunde. Die Vollgeld-Idee ist als Reaktion auf die weltweite Krise der Kreditinstitute und die notwendigen staatlichen Hilfsmaßnahmen einzustufen. Die in der Literatur dargestellten Argumente für und gegen die Vollgeld-Idee wurden hier nicht noch einmal umfassend vorgetragen.[6]

Gegen die Umsetzung der Vollgeld-Idee sprechen der falsche Ansatzpunkt für Verbesserungen des Geldsystems, die nicht angestrebten Verbesserungen der Geldtheorie und -politik und die nicht vorhandene Steigerung des Zielbeitrags zu allen oben genannten Zielen eines Geldsystems.

Der Ansatzpunkt für Verbesserungen im Umgang mit Geld ergibt sich aus den drei Funktionen des Geldes. Die ersten beiden Funktionen (Recheneinheits- und Zahlungsmittelfunktion) sind mit der gesetzlichen Einführung einer Währung als offizielles Geld quasi automatisch und zu hundert Prozent gegeben. Anders ist es mit der dritten Geldfunktion, der Wertaufbewahrungsfunktion. Diese Funktion ist nicht automatisch gegeben. Sie muss durch die Geldpolitik mittels Geldmengensteuerung und Zinsfestlegung von der Zentralbank gesichert werden. Eine hundertprozentige Sicherung der Wertaufbewahrungsfunktion bzw. der Geldwertstabilität ist nur möglich, wenn die gesamte Wirtschaft im Gleichgewicht ist oder die dritte Funktion des Geldes abgeschafft wird.

Die Schwächen der aktuellen Geldtheorie und –politik, die aus einem Mix von monetaristischer Geldmengensteuerung (Friedman) und von Keynes vertretener Zinssteuerung besteht, könnten durch die Vollgeld-Idee reduziert werden. Die Geldmengensteuerung erhielte wieder mehr Gewicht. Es lässt sich aber auch aus den Schwächen und den Vorteilen der beiden geldtheoretischen Ansätze ein neuer Ansatz ableiten, der ein Mix ergibt, das als erfolgsversprechender einzustufen ist, als die bisherige Geldpolitik [Witte 2015: 108-127]. Der neue Ansatz der Geld- und Währungstheorie basiert auf Veränderungen und Zusammenführung der Fisherschen Tauschgleichung bzw. ihrer modernen Varianten sowie der von Keynes aufgestellten Gleichungen.

[6] www.vollgeld.de/kritik und gegenkritik [abgerufen am 26.09.2017].

Eine Steigerung des Zielbeitrags zu einem Ziel eines Geldsystems ist durch die Vollgeld-Idee durchaus zu erkennen. Die Geldmengensteuerung würde in einem Voll-Reservesystem erfolgreicher. Die Zentralbank könnte die Geldmengen wieder direkter steuern und die indirekte Steuerung über den Zins reduzieren. Dies entspricht den Erkenntnissen von Friedman, der die von Keynes propagierte Zinssteuerung aufgrund von „time-lags“ als zu spät (prozyklisch) wirkend identifiziert. Angesichts dieser Erkenntnisse wäre es sinnvoller, das Geldsystem noch mehr auf eine direkte Geldmengensteuerung auszulegen. Die Effektivität und die Effizienz des Geldsystems könnten gesteigert werden.

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The Idea of Full-Money

Abstract. *The article describes the idea of full-money, which is seen as a necessary measure to increase the security of the current money system. The concept is being discussed in Switzerland and is going to be put to the vote in a referendum in 2018 to determine how much political support there is for its implementation. The concept of full-money is also known as the full-reserve-system because it is assumed that 100 per cent of credits granted by credit institutions correspond to reserve money held in the central bank. This solution secures only one of the four parts of the money system. The amount of money available should vary more directly and be less affected by interest rate fluctuations compared to the actual money system. It has been known since the times of Friedman that a direct variation in the amount of money is a more effective way of controlling an economy. The full-money-idea is not based on a new monetary theory but merely provides more incentives to reach one of the objectives of the money system (monetary policy).*

Keywords: *full money, monetary theory, monetray policy, money amount control, money value stability, monetary system*

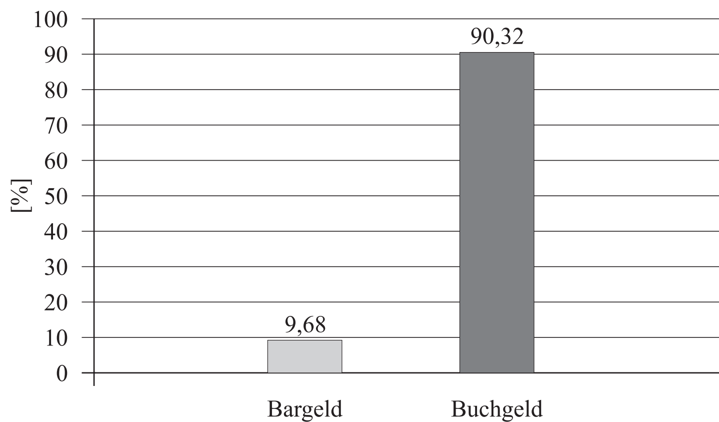
Anhang

Tabelle 1. Buch- und Bargeldmenge im Geldsystem der Eurozone in Mrd. Euro und Anteil Buchgeldan der Geldmenge M_3 in % (2005-2015)

Jahr	Geldmenge M_3	Bargeld	Buchgeld	Anteil Buchgeld in %
2005	7.130,7	532,7	6.598,0	92,25
2006	7.801,7	592,1	7.209,6	92,24
2007	8.691,4	638,6	8.052,8	92,65
2008	9.423,8	722,7	8.701,1	92,23
2009	9.382,2	769,9	8.612,3	91,79
2010	9.320,8	808,6	8.512,2	91,32
2011	9.535,0	857,5	8.677,5	91,01
2012	9.808,0	876,8	8.931,2	91,06
2013	9.849,5	921,2	8.928,3	90,64
2014	10.312,8	980,6	9.332,2	90,49
2015	10.836,8	1.048,9	9.787,9	90,32

Quelle: eigene Berechnungen nach nach www.sachverständigenrat-wirtschaft [abgerufen am 15.06.2017].

Abb. 2. Graphische Darstellung des Verhältnisses von Buch- zu Bargeld in der Eurozone im Jahr 2015 (in %)



Quelle: Tabelle 1.

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Fiscal Stability through Tax Harmonization – the Concept of CCCTB in the European Union

Abstract. *In the field of tax harmonization, a proposal for the harmonization of corporate tax systems was formulated as early as 1975, but it could not be adopted, since it did not provide for a harmonization of the tax profit rules. At this point, the CCCTB proposal from 2011 and the amendment proposal based on it from 2016 – that is, almost 36 years and 41 years later – are re-established. However, no "full harmonization" is being pursued and no fully compulsory application of the now two-step CCCTB concept is to be introduced. It is unlikely that the concept will be unanimously adopted and implemented by all 28 EU Member States. One major reason for this is certainly the fact that the new (as well as the old) proposal only contributes to a so-called "partial harmonization" and thus, in effect, counteracts itself. Only a fully harmonized EU corporation tax could ultimately ensure that the fundamental principle of tax law – the principle of fiscal justice – and the closely connected fiscal principle as well as the efficiency principle can be met. If taxation takes place in this sense, distortions of economic decisions, aggressive tax planning and double taxation and/or non-taxation can be avoided and the tax revenues for the tax administration can be kept stable.*

Keywords: *CCCTB, tax harmonization, fiscal stability*

Introduction

In the European Union, corporate tax rates for corporations vary between 10% and 35% [BMF 2017]. In combination with the individual tax base (profit determination regulations), the type of the corporate tax system and additional tax types to be considered, this results in a strongly fluctuating tax burden which leads

to serious **disadvantages**. Firstly, it provides a strong incentive to internationally active companies to avoid high taxation. This leads to **information distortion concerning location, investment type and financing**. An efficient resource allocation is no longer guaranteed: capital is no longer controlled by the yield to be achieved, but by taxes. Without the removal of such distortions, the economic objectives of the Treaty on the Functioning of the European Union (formerly the European Community Treaty) would be jeopardized, i.e. the competitiveness of EU-based enterprises would be limited and the EU community as a whole would have to face welfare losses [BMF 2007]. Secondly, owing to differences in the national tax systems, there has been a significant rise in **aggressive tax planning resulting from a deliberate profit shifting to low-tax countries** over the past decade. Thirdly, if national regulations are adopted without taking into account the cross-border dimension of business activities, there will be easily discrepancies between the interaction of different national corporation tax regimes. Such discrepancies generate **risks of double taxation and/or non-taxation** and thus hinder the smooth functioning of the internal market [EC 2016a: 2]. Examples include exit taxation, the transfer pricing problem and so-called qualification conflicts [Eggert 2015: 525-527]. The Member States are therefore finding it increasingly difficult to protect their national tax bases against erosion and profit shifting. Only a Common Consolidated Corporate Tax Base (abbreviated as CCCTB) could provide a long-term remedy, according to the European Commission [EC 2016a: 2]. The aim of the following contribution is therefore to examine the extent to which the CCCTB developed by the European Commission is able to harmonize the European company tax law and lead to a necessary stabilization of tax revenues in the Community area as a result. In addition, the author tries to determine which "screws" need to be rotated in order to achieve this goal better. In the following sections, the (old and new) directive proposals will be presented first (Part 1). In Part 2 the definition of tax harmonization as such and its possible "optimal design" in the EU are discussed in more detail. Finally, in Part 3 the author examines to what extent the new approach to taxation can help to ensure fiscal stability.

1. The concept of CCCTB

1.1. The "old" version dated March 2011

The content of the directive proposal for a CCCTB of 16 March 2011 [EC 2011a] was a concept for a uniform ("harmonized") set of rules that European companies could use to determine their taxable profits. Only a harmonization of the corporate tax base was envisaged. The primary objective of the proposal was

to avoid exorbitant costs by means of a fundamental simplification of European tax law: European[1] companies still have 28 different rules for determining their taxable profits and have to file tax returns in each Member State in which they operate. This results in high declarations or compliance costs for companies and considerable administrative and control costs on the part of the national financial administrations. By introducing a CCCTB, it would now be possible to apply only a single set of rules across the EU for the purpose of calculating the tax base for a company or a group of companies, and to submit tax declarations to a single European tax authority. Another purpose of the CCCTB was to **facilitate the expansion of companies**. The determination of the tax base in other Member States by means of different national regulations is often an insurmountable obstacle to the expansion of business activities. By applying the CCCTB, however, companies would have to deal with a single tax system and a tax authority. This would be a great opportunity for SMEs in particular, which unlike large corporations, cannot afford expensive advice from tax consultants and auditors. Finally, the CCCTB could also **increase the attractiveness of the European Union for third-country investors**. Companies operating in third countries (such as the USA or China) have only to deal with one national tax system. Third-country companies willing to invest in the EU, however, are faced with 28 different European systems that differ from their own tax system, which increases tax expenses and costs. This would not be the case given a single set of rules (in the form of the CCCTB) and a single point of entry for the submission of tax declarations [EC 2011b].

Relevant changes in European corporate taxation are the following:

1. The **CCCTB system** should be **applicable as an option** [EC 2011a, art. 6]. Companies operating within a single national tax system would not be obliged to switch to a new tax system with high change-over costs [EC 2011b]. The Directive has priority over treaties concluded between Member States [EC 2011a, art. 8]. Companies willing to join the system would, however, be obliged to apply the CCCTB for a period of at least five years [EC 2011a, art. 105].

2. The **harmonized tax bases of members of a group of companies ("Group") have to be consolidated** [European Commision 2011a, art. 9-16 and 57 § 1]: Each group member has to determine its individual positive or negative CCCTB tax base and balance it with the harmonized tax bases of the other group members (keyword "cross-border loss compensation"). Provided that the **consolidated tax base** determined in this way is positive, it is allocated to each member of the group on a pro rata basis by means of a formula developed specifically for this purpose [EC 2011a, art. 86 ff.] (see also below). In the case of a negatively consolidated tax base, the (unrestricted) loss is carried forward and balanced with

[1] In the following article, the term "Europe" refers only to the 28 Member States of the European Union.

the next consolidated tax base [EC 2011a, art. 57 § 2]. In the calculation of the consolidated tax base, it should also be borne in mind that profits and losses from transactions carried out directly between members of a group are disregarded [EC 2011a, art. 59 § 1].

Example 1 [cf. also EC 2011b]:

A CCCTB group consists of companies **G** and **P**. Company G is located in Trier (**G**ermany) and company P in Poznań (**P**oland). Company G achieves a negative harmonized tax base (loss) of €8 000 000 and P a positive harmonized tax base (profit) of €20 000 000. The Group's consolidated tax base therefore amounts to €12 000 000 (profit of P minus loss of G).

3. For the purposes of **determining corporate tax in keeping with CCCTB,** it is necessary to determine whether tax is calculated for an individual company (case 1) or a group of companies (case 2). In the first case, the tax base pursuant to CCCTB must be determined and then the national tax rate must be multiplied [EC 2011a, art. 103].

Example 2:

A corporation based in Poznań (Poland) calculates a tax base in accordance with CCCTB for the tax year 2016 in the amount of €5 000 000. The corporate tax to be paid therefore amounts to €950 000 (19% of €5 000 000; cf. Fig. 1). If the corporation would be located in Trier (Germany), corporate tax would amount to €750 000 (15% of €5 000 000; cf. Fig. 1).

In the second case ("a group of companies"), the proportion of the group member in the positively consolidated tax base is to be determined by means of a formula [EC 2011a, art. 86 § 1]. The formula is based on the factors of sales S, labor – represented by payroll P and the number of employees E – and assets A (for example property, plant and equipment including buildings, aircraft and machinery), all three being equally weighted:

$$\text{Share} = 1/3\ [S^A/S^{Group} + 1/2\ (P^A/P^{Group} + E^A/E^{Group}) + A^A/A^{Group}] \times \text{consolidated Tax Base}$$

The national corporate tax rate applicable to the share of the respective group member is to be applied [EC 2011a, art. 103].

Example 3 [cf. EC 2011b]:

Companies G (Germany) and P (Poland) form a CCCTB group. The (positive) consolidated tax base is €450 000 000. Company G has capital of €100 000 000, a payroll of €100 000 000, 1000 employees and sales in Member State G of € 1 000 000 000. Company P has capital of €200 000 000, a payroll of €200 000 000, 2000 employees and sales in Member State P of €2 000 000 000. The pro rata tax bases for G and P are thus:

$$\text{Share G} = 1/3\ [1/3 + 1/2\ (1/3 + 1/3) + 1/3] \times €450\ 000\ 000 = €150\ 000\ 000$$

$$\text{Share P} = 1/3\ [2/3 + 1/2\ (2/3 + 2/3) + 2/3] \times €450\ 000\ 000 = €300\ 000\ 000.$$

Company G in Germany would therefore pay corporate tax in the amount of €22 500 000 (15% of €150 000 000) and company P in Poland in the amount of €57 000 000 (19% of €300 000 000).

1.2. The "new" version dated October 2016

Based on the directive proposal of 16 March 2011, the European Commission published two new proposals on 25 October 2016 with a (more or less pronounced) consideration of the opinions and criticisms of various Member States and the general public: the Directive on a Common Corporate Tax Base ("CCTB") [European Commision 2016a] and the Directive on a Common **Consolidated** Corporate Tax Base ("CCCTB") [EC 2016b]. These drafts are to be implemented in a two-step plan: from 1 January 2019 the CCTB is to be applied in the EU [EC 2016a, art. 70 § 1]. After another two years, the regulations of the CCCTB are to be implemented – starting from 1 January 2021 [EC 2016a, art. 80 § 1].

In the **CCTB** proposal, a compulsory (that is, not "merely" optional) harmonized profit determination is foreseen for companies forming part of a group which achieves a consolidated total turnover of more than €750 000 000 (previous year) [EC 2016a, art. 2 § 1]. In addition, the proposal has been extended by the addition of:

– an updated permanent establishment definition [EC 2016a, art. 5],

– an increased deduction for research and development costs [EC 2016a, art. 9],

– a kind of equity interest deduction ("allowance for growth and investment", abbreviated as AGI) [EC 2016a, art. 11],

– an interest limitation rule (in the context of the Base Erosion and Profit Shifting – known as BEPS – initiative) [EC 2016a, art. 13],

– an exit taxation [EC 2016a, art. 29] and Controlled Foreign Corporation (CFC) rules [EC 2016a, art. 59 ff.],

– the detection of so-called hybrid mismatches [EC 2016a, art. 61].

In the second step, the provisions of the **CCCTB** are to be applied primarily with regard to the consolidation of the harmonized tax bases, including the necessary non-consideration of intra-group transactions, and the subsequent formal division. The formula was adopted unchanged from the 2011 proposal directive. The national corporate tax rate is to be applied to the split consolidated tax base: harmonization of the corporate tax rates is still not foreseen.

2. The meaning of Tax Harmonization

Harmonization in general means "unification" or "equalization." The CCCTB proposal presented in Part 1 sets the standard for the corporate's tax base for com-

panies operating in the EU. There is no provision for the harmonization of national corporate tax rates. In this part, three fundamentally conceivable forms of tax harmonization will be presented and discussed in more detail below [cf. BMF 2007]. Specifically, these are the basic forms of tax harmonization (sorted with descending intensity of harmonization): harmonization of national corporate tax systems, harmonization of corporate tax rates, creation of an EU-wide consolidated corporate tax base.

2.1. Harmonization of national corporate tax systems

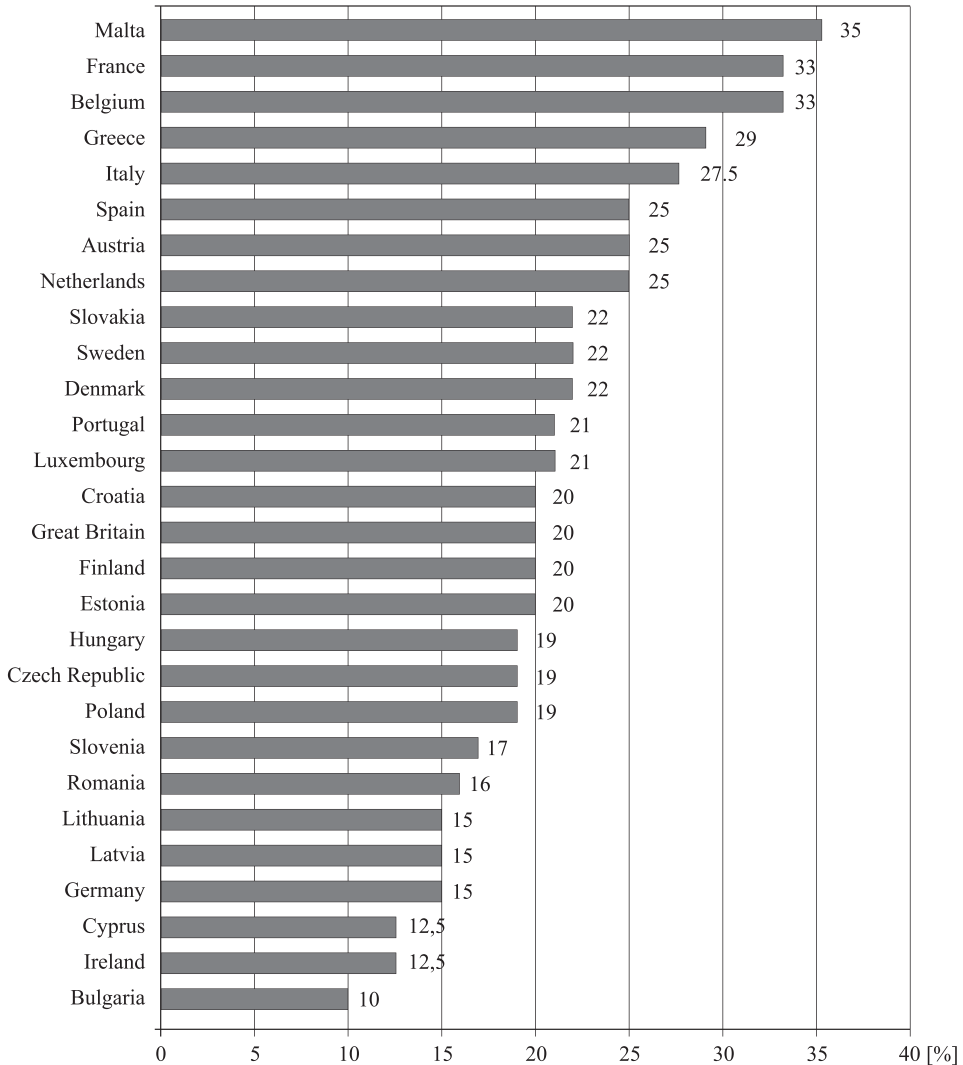
The idea of an extensive, sometimes detailed, harmonization of the national tax systems was already the focus of the so-called "Neumark Report" [EWG 1962] as early as 1962 and still does not appear to be feasible. In the past, this was mainly due to the fact that the EU Commission and expert groups were primarily concerned with measures relating to national taxation and did not pay much attention to prospects for the development of international corporate taxation in the internal market. Without attempts to achieve such a model, substantial tax obstacles to cross-border business activities cannot be eliminated. The harmonization of the national corporate tax systems (so-called **full harmonization**) would also meet with considerable political resistance because of the resulting interventions in national tax sovereignty. A typical example of this is the CCCTB proposal from 2011, which is far from being fully harmonized (see below for more details). Last but not least, the fact that the extent to which welfare gains achievable through tax harmonization can be realized is difficult to quantify, and individual Member States could suffer considerable welfare losses through full harmonization.

2.2. Harmonization of corporate tax rates

There are (still) 28 different national EU corporate tax rates. Chart 1 provides an overview of the spread of corporate tax rates in the EU for the year 2016.

Since the tariff burden of corporate profits plays a prominent role in the taxation of profits, a harmonization of the corporation tax rate would, in itself, contribute significantly to a reduction of distortions concerning location, investment and financing decisions of corporations. However, this would mean renouncing a central element of national tax sovereignty. As a result and in view of the subsidiarity principle, this "weakened" form of full harmonization is also not being pursued at present. Notwithstanding this, an exclusive adjustment of the tax rates would be insufficient, since the influence of different profit determination regulations remains to the level of effective charges. Moreover, the isolation of national tax

Chart 1. Different corporate tax rates in the European Union 2016



Source: based on BMF 2017: 16.

bases by virtue of the residence and source principle causes substantial obstacles to cross-border business activities in the internal market. Finally, the coexistence of residence and source principle is also responsible for the growing conflicts over the distribution of tax revenue between Member States and the associated collisions with EU law caused by domestic measures against the transfer of profits to low-tax countries.

2.3. Creation of an EU-wide consolidated corporate tax base

The CCCTB concept is a feasible form of tax harmonization: unification is, however, limited to the determination of the tax base, harmonization of tax rates is not foreseen. One speaks in this context of a "**partial harmonization.**" It is unclear in which way this concept is to differ from the "full harmonization" (section 2.1) and the partial harmonization according to section 2.2. In its resolution of 16 December 2016, the Federal Council in Germany issued a detailed statement on this point [Bundesrat 2016]. On the one hand, it can be seen that an EU-wide uniform and consolidated corporate tax base, supported by all Member States,

– increases the transparency of company taxation,

– reduces the tax compliance costs for companies and the fiscal administrative costs resulting from dealing with the currently 28 different national tax systems,

– eliminates existing obstacles to the internal market and facilitates cross-border activities.

On the other hand, there still many open points that need to be clarified. This includes in particular the following:

1. The uniform and consolidated corporate tax base should be equally compulsory for all taxable groups of companies: A semi-compulsory system must be considered, which requires consolidation only for taxable groups of companies which fulfill certain size criteria. In the optional version, the financial authorities would have to administer two systems, including deviating procedural rights, in parallel. This would not only lead to a renewed "complication" of European tax law, but also a considerable increase in administrative and control costs.

2. The formula provided for in the proposal directive does not currently allow for proper distribution of the tax base to the Member States concerned. High-tech industries are, for example, disadvantaged by the fact that the value of self-constructed intangible assets is not included in the distribution of the consolidated tax base.

3. A harmonization and consolidation of the corporate tax base without simultaneous adjustment of the nominal tax rates will lead to an additional tax competition on the taxation of mobile economic factors. As a result, ultimately all Member States are losing more and more tax substrates. Therefore, the harmonization and consolidation of the tax base should be accompanied by a harmonization of tax rates, at least by establishing a tax rate corridor with a substantial downward restriction.

3. Tax Harmonization leads to Fiscal Stability – which way and why?

Partial harmonization is fundamentally suboptimal (for reasons see Part 2). Only a fully harmonized tax, i.e. a harmonization of all national EU corporate tax systems, could ulitmately help to "fill the holes in the European state treasuries" and ultimately keep tax revenues in the European Union at a constant level. In other words, full harmonization leads to fiscal stability. This connection can be explained by the following three general tax principles. The principles were developed by the Working Group on the "Common Consolidated Corporate Tax Base" of the European Commission [2004]. These principles can provide a kind of evaluation framework or should serve to elucidate the fact that a fully-harmonized tax has the structural elements necessary to achieve the objective of fiscal stability – at least in the medium to long-term.

The three principles include: the fundamental principle of fiscal justice, the fiscal principle and the efficiency principle.

3.1. Fundamental principle of fiscal justice

It is also referred to as the principle of equal taxation according to the performance or performance principle [Tipke 2000a: 480]. According to this, a fiscal purpose tax (= all tax types except for so-called steering taxes, see also under 3.2). Fiscal principle [Tipke 2000a: 495]) is "fair" when taxpayers are taxed according to their economic performance: taxpayers with the same capacity have to bear the same tax burden while those with different performance must be taxed differently [Birk 2000: 104]. The performance principle is based on the economic (in contrast to the mental or physical) performance expressed in terms of income [Tipke 2000a: 481]. This is linked to the tax performance [Tipke 2000a: 496]. The tax performance is defined as the tax base for a fiscal purpose tax. The performance principle has completely European roots [Tipke & Lang 2005: para. 4 point 82]. Some European constitutions even explicitly admit of taxation according to economic performance. In Germany, for example, the equality of taxation becomes more concrete in Art. 3 (1) of the German Constitution. The performance principle should therefore be accepted across the Community [Hey 2005: 325]. Tax equality can only be achieved within the same fiscal framework [Birk 2000: 108]. This corresponds to the intention of the common market or internal market. In the European context, therefore, the principle of performance can also be described as an internal market principle. In order to reduce differences in the tax burden between the Member States' national tax regimes and thus reduce considerable disparities

in the tax treatment of taxpayers, it is urgently necessary to seek harmonization [Birk 2000: 109]. A fair EU tax system requires a fully harmonized tax system that identifies equal tax issues equally and different tax situations differently according to the economic performance [Everett 2006: 368; BMF 2007]. A German tax law scientist named Klaus Tipke formulated this many years ago as follows: "Europe as an economic and monetary union needs as far as possible a harmonized tax law with the ultimate goal of a European tax code, standardized in a European Tax Law Book" [Tipke 2000b: 9].

3.2. Fiscal principle

The fiscal principle is closely linked to the principle of fiscal justice: the result of a fair tax is essentially the expression of its ability to fulfill its basic purpose. This consists in obtaining revenue for fulfilling sovereign tasks and imparting desired economic incentives [Tipke 2003: 872]. It is undisputed that the European corporation tax is one of the most basic sources of revenue [OECD 2016].[2] For example, the revenue from German corporation tax for the year 2016 amounted to €27 442 000 000 [BMF 2016]. With a fully harmonized EU corporation tax, it can be assumed that not only will overall European tax revenues increase considerably in the short term, but also tax levels will stabilize in the medium to long term:

1. Member States would no longer be able to facilitating the excessive diversion of profits since differentiation into high and low tax countries would not exist anymore. Corporations would be taxed equally in the European Union, irrespective of which Member State they are established in. An aggressive tax planning through a deliberate profit shifting to low-tax countries would no longer be necessary. Cases of EU-wide double- and/or non-taxation due to the divergent tax systems of the Member States would also become a thing of the past. The effects on the area of exit taxation would be particularly favorable. In addition, an unification of transfer prices and an elimination of qualification conflicts (keyword "hybrid mismatches") would be expected [cf. Eggert 2015: 527].

2. The administrative and control costs of the European tax administrations could be reduced: There would be only one compulsory tax regime: measures to avoid international double or multiple taxation would be just as superfluous as 28 national corporate tax systems. The net revenue (= gross revenue minus administrative and control costs) from the harmonized EU corporate tax would increase. Furthermore, there would be no need to refer to the European Court of Justice (ECJ) in order to have national regulations checked for compatibility with the European law [Everett 2006: 368].

[2] In this context, however, it should be noted that even low income taxes can always provide a positive contribution to meeting the government's financial needs.

3. With a fully harmonized corporate tax, the competitiveness of the European Union could be increased against third countries: third-country investors would only have to deal with a one single EU corporate tax system [EC 2004].

3.3. Efficiency principle

The question is whether a tax is to be classified as efficient or as a decision-neutral one. A tax is designated as decision-neutral if it causes no distortions of individual behavior and, consequently, no loss of welfare (additional charges) [Scheffler & Wigger 2006: 2446]. A **fully harmonized EU fiscal purpose tax** could make a positive contribution to the **neutrality of decision-making within the European Union**[3]:

1. This would result in investment decisions made according to economic criteria for the best location within the EU. We then speak of the location neutrality of taxation. This avoids "allocation **in**efficiency", i.e. the choice of investment locations where the capital is not the most productive [EC 2004].

2. Capital Export Neutrality (CEN) and Capital Import Neutrality (CIN) could also be achieved through a fully harmonized tax. CEN refers to the situation when domestic investments made by an investor are treated in the same way as its foreign investments and is generally considered fulfilled if income, irrespective of whether it comes from a domestic or foreign source, is only taxed in the state of residence (= application of a resident-oriented concept of taxation on the basis of worldwide income by the participating countries = "unlimited tax liability"). CIN, on the other hand, means that domestic and foreign investors in the same local market are treated equally for tax purposes, that is, the participating countries pursue a source-oriented, territorial taxation concept ("limited tax liability") [Eeropean Commission 2004]. A harmonized EU tax would ensure both CEN and CIN.

Conclusions

The present study has focused on why and to what extent a harmonized EU corporation tax is appropriate and necessary in order to stabilize (future) overall European tax revenues in the medium to long term. Partial harmonization – as currently proposed by the European Commission in the form of the CCCTB concept – does not lead to the desired success. Such a "weakened" form of harmonization in the European Union will only perpetuate distortions of economic decisions, the need for international tax planning and double and/or non-taxation

[3] In isolation, a harmonized tax is not compatible with the efficiency principle. If EU external investors or investments are included in tax planning, the unified EU corporate tax will compete with the taxation system of third countries [cf. Kellersmann & Treisch 2002: 74-75].

problems. Although from an economic point of view full harmonization is always preferable, it must not be forgotten that many open points still need to be clarified. A very important aspect is the question of **political enforceability** of **such a fully harmonized tax**. Acting in accordance with a special legislative procedure, the Council could adopt directives for the alignment of the laws, regulations and administrative provisions of the Member States, which directly affect the establishment or functioning of the internal market. The adoption must be unanimous and in consultation with the European Parliament and the Economic and Social Committee [TFEU, art. 115]. If the required unanimity of the Member States concerned is not achieved in the Council, implementation in the form of so-called "enhanced cooperation" between individual Member States would be possible. In the case of enhanced cooperation, only a core stock of at least nine Member States will adopt and implement the directive proposal [TEU, art. 20 § 2]. Once enhanced cooperation has been established, it will be open to non-participating Member States interested in joining the system later on [TEU, art. 20 § 1; TFEU, art. 328]. Especially in the recent past (keyword: "CCCTB concept 2011") it has once again become clear that the unanimity demanded by the Council is pointing the way. A further problem that should not be underestimated in this context is probably **the lack of flexibility** of such a corporate tax: any subsequent amendment to the harmonization directive would have to be approved **unanimously** by all Member States. On the grounds of procedural economy, however, it is likely that the Council itself would be authorized in the directive regulating the central questions to adopt subsequent amendments without the need to vote by a qualified majority. Sometimes, a special committee procedure is used to make it possible to adapt specific details more flexibly to facilitate technical progress. In summary, fiscal stability is achieved through full harmonization. It is not yet foreseeable how long it will take to reach this level of harmonization. However, the harmonization process has already been underway for some time. The CCCTB proposal should, therefore, be welcomed in every case and evaluated as a step in the right direction.

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Steuerstabilität durch Steuerharmonisierung – das Konzept der GKKB in der Europäischen Union

Zusammenfassung. *Im Bereich der Steuerharmonisierung wurde bereits im Jahre 1975 ein Richtlinienvorschlag zur Vereinheitlichung der Körperschaftsteuersysteme formuliert, der jedoch nicht verabschiedet werden konnte, da er nicht auch eine Harmonisierung der steuerlichen Gewinnvorschriften vorsah. Genau an diesem Punkt knüpfen der GKKB-Vorschlag aus dem Jahr 2011 und der hierauf basierende Änderungsvorschlag aus dem Jahre 2016 – also fast 36 bzw. 41 Jahre später – wieder an. Jedoch wird keine „Vollharmonisierung" angestrebt und es soll auch keine vollumfänglich verpflichtende Anwendung des nun zweistufigen GKKB-Konzepts eingeführt werden. Die Chancen für die einstimmige Annahme und Umsetzung durch alle 28 EU-Mitgliedstaaten stehen nicht besonders gut. Ein wesentlicher Grund hierfür ist sicherlich auch darin zu sehen, dass der neue (wie alte) Vorschlag lediglich zu einer so genannten „Teilharmonisierung" beiträgt und somit im Endeffekt sich selbst konterkariert. Ausschließlich eine vollharmonisierte EU-Körperschaftsteuer könnte letztlich bewirken, dass dem Fundamentalprinzip der Steuerrechtswissenschaften – dem Prinzip der Steuergerechtigkeit – und dem hiermit eng verbundenen Fiskalprinzip wie auch dem Effizienzprinzip entsprochen werden kann. Findet nämlich eine Besteuerung in diesem Sinne statt, können Verzerrungen ökonomischer Entscheidungen, aggressive Steuerplanung wie auch Doppel- und Nichtbesteuerung vermieden und damit einhergehend die Einnahmen für den Fiskus stabil gehalten werden.*

Schlüsselwörter: *GKKB, Steuerharmonisierung, Steuerstabilität*

Current Challenges to Fiscal Stability

Zeszyty Naukowe
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Stability of Corporate Income Tax in the European Union

Abstract. *The article discusses the legal basis of corporate income tax and compares the provisions of the Polish law on corporate income tax with the draft CCCTB directive. The author analyses tax revenues and tax costs with particular emphasis on revenue not constituting tax revenue and expenses which are not considered tax deductibles. The author also presents results of a survey sent to 1,000 Polish companies required to pay corporate income tax. The sampled companies were selected at random from the entire population of businesses in Poland. Questionnaires were also sent to 500 companies in the EU, mainly in Germany, the UK, France, the Netherlands, Italy and the Czech Republic. The survey was answered by a total of 112 Polish companies and 50 foreign companies. Both the Polish and foreign businesses which responded to the survey were mainly limited liability companies and joint stock companies. The basic part of the survey was carried out in 2010–2011, but it was repeated in 2012, with an additional 200 questionnaires sent to Polish companies, of which 15 responded.*

Keywords: *finance, corporate finance, corporate income tax, tax stability, CCCTB concept*

Introduction

The financial and public finance crisis that affected the EU countries also highlighted the problem of tax systems in 27 EU states. One of the primary purposes of EU law is to eliminate obstacles to the functioning of the internal market, particularly to improve the competitiveness of businesses. Having said that, the concept of a Common Consolidated Corporate Tax Base (CCCTB), which aims

to eliminate obstacles to the functioning of the internal market and increase the degree of tax harmonization in the European Union [Iwin-Garzyńska 2016: 17-51]. This article discusses the base of the corporate income tax, and compares the provisions of Polish law on corporate income tax with the draft CCCTB directive. It provides an analysis of tax revenues and tax costs with particular emphasis on revenue not constituting tax revenue and expenses not considered tax deductibles.

1. Tax revenues

The corporate income tax is based on the universal principle that the value of tax which the entrepreneur is obliged to pay depends on the tax base and tax rates. The tax base is subject to tax harmonization, i.e. the amount will be determined according to uniform rules for all companies covered by the CCCTB in individual EU countries. The tax base will therefore be the difference between taxable income, minus income exempt from taxation and deductible costs. Thus, to determine the tax base it is important to define the notion of tax revenues, income exempt from income tax and deductible costs. Definitions of these categories in the system of a common consolidated corporate tax base should include a set of common rules for calculating the corporate tax base, without prejudice to the provisions laid down in Council Directives 78/660/EEC and 83/349/EEC and Regulation of the European Parliament and of the Council 1606/2002/EC.

The analysis of the tax base for corporate income tax in the Polish legislation in the context of the CCCTB concept should start with defining the tax base, i.e. taxable income. In the simplest terms, it is defined as a difference between tax revenues and costs of obtaining them.

In accordance with the provisions of the Corporate Income Tax Act,[1] income is defined as the excess of the sum of revenues over costs of obtaining them achieved in the fiscal year, subject to special rules for determining income (revenue) from participation in profits of legal persons and transactions between related parties and entities residing in tax havens (Art. 7 § 2, Art. 10 and 11). If deductible costs exceed the amount of revenue, the difference is a loss. In certain situations, the tax base corresponds to the income without taking into account tax deductible expenses. The income indicated in the act is the basis of income taxation regardless of the source of revenue from which it was obtained.

The Corporate Income Tax Act does not explicitly define "revenue." The rules for the generation of income are defined in art. 12 of the Act. § 1 of this article only contains a catalogue of examples of revenues subject to corporate income

[1] Corporate Income Tax Act of 15 February 1992, Journal of Laws 2000, No. 54, item 654 as amended (ustawa z dnia 15 lutego 1992 r. o podatku dochodowym od osób prawnych, Dz.U. 2000, nr 54, poz. 564 ze zm.).

tax. This is indicated by the legislator with the phrase “revenue particularly includes.” This is an open list, and tax revenues particularly include:

– cash and cash equivalents received, including foreign exchange gains,

– the value of things, rights and benefits received free of charge or partially free of charge, as well as the value of other gratuitous or partially gratuitous benefits.

The value (subject to § 4 item 8 of the Act) of redeemed or expired:

– liabilities, including credits, loans, excluding loans amortized from the Labour Fund,

– funds in bank accounts – banks.

The literature indicates that, based on the open list provided above, revenue can be defined as any property gain that increases assets or decreases liabilities [Iwin-Garzyńska 2016]. Such a definition of tax revenue is also reflected in court decisions. In its judgment of 13 July 2010, The Supreme Administrative Court stated that “the legislature did not formulate the requirement that revenue may only cover gains mentioned in Art. 12, which are a direct result of achieving the aim of economic activity of a legal person. Therefore, any cash deposit may be considered as revenue of a legal person, provided it meets other requirements set out in section 2 herein. In particular, par. 4 of Art. 12 contains a list of benefits that are not classified as income. It is important to note that the legal norm contained in Art. 12 par. 4 of the Act on corporate income tax provides a closed list, the scope of which is not subject to extension or constriction through the use of analogy and extensive interpretation.”

Essentially, whether a property gain is regarded as revenues of a legal person depends on the definitive nature of the gain in the sense that it actually increases the assets of that legal person. In its judgment dated 27 November 2003, the Supreme Administrative Court in Warsaw stated that “only those gains that increase in the taxpayer’s assets can be classified as revenue can.”

At the same time, the fact that a benefit is not included in the list of cash inflows not recognized as taxable revenues by the legislator does not mean it is regarded as taxable revenue. This was pointed out by the Supreme Administrative Court in its judgment of 14 May 1998, in which it stated that “the main idea of the income tax implies that it is a levy on receipts that enrich the taxpayer, therefore, only those receipts that increases the taxpayer’s assets can be regarded as revenue, i.e. as a source of income. Therefore, the category of money or monetary assets received in the sense of Art. 12 par. 1 item 1 of the Act in question only includes receipts that increase the taxpayer’s assets, i.e. those that become their property.”

Taxation should cover all revenue, unless it is expressly exempted from tax. Tax-neutral revenues, i.e. those that are not included in the tax base are listed in Art. 12 par. 4 of the Act on corporate income tax. This paragraph provides a closed

list, which is not subject to extension or narrowing through the use of analogies, or broad interpretation.

Revenue exempt from tax includes payments or accrued receivables on account of the supply of goods and services. In order for received or accrued contributions to be recognized as deferred revenue it should be possible to allocate these payments to future accounting periods. The company must prove (pointing to the provisions of the contract or the content of the invoice) that the supply of goods or services is to take place in the following accounting periods after the accounting period in which the taxpayer receives payment (advance payment). The provision in question applies in particular to services provided on a continuous basis.

According to Art. 12 § 4, item 2, assets not considered to be revenue include amounts of accrued but not yet received interest on debt, including outstanding loans (credits). This means that interest is not subject to tax until it is paid. The taxpayer receives taxable revenue from interest at the time of its actual receipt. In this case, cash accounting will apply, which means that the company which is owed interest is required to include it in their revenues only in the accounting period in which the interest is actually received. Any decision of contractors regarding e.g. changes in interest rates on loans, postponement of payments, etc. remains tax neutral until the actual payment of interest.

Other categories of assets not classified as revenue include amounts generated by redeemed shares in a company in the part constituting the cost of their purchase or acquisition. This also applies to the value of assets received by shareholders in connection with the liquidation of a legal entity. On the other hand, amounts received for redeemed shares in excess of the price paid for those shares are taxable revenue.

In accordance with the provisions of the Act, the list of assets not classified as revenues includes revenues from redistributable as well as non-redistributable capital, provided for in the Code of Commercial Companies. Such subsidies are a variety of cash benefits brought by shareholders for the company to enlarge its assets. Therefore, subsidies do not affect the size of the share capital. Taxable revenue excludes cash inflows in excess of the nominal value of shares, received at the moment of issue and transferred to the share premium account.

Monetary and non-monetary contributions brought to the capital company are regarded as tax-neutral. According to the provisions of the Corporate Income Tax Act, assets brought to cover equity (capital) are not regarded as taxable revenue, which means that the capital raised through the issue of new ordinary shares does not constitute taxable revenue. This means that expenses related to the acquisition of capital cannot be treated as tax deductible costs. After all, they are not associated with taxable revenue but with the performance of a tax-neutral operation on the share capital [Iwin-Garzyńska 2015].

The provisions of the Corporate Income Tax Act do not apply to:

– revenue from agricultural activities, with the exception of income from special branches of agricultural production,

– revenue from forestry as defined in the Forest Act,

– revenues resulting from transactions that may not be legally binding contracts,

– revenue (income) of ship-owners subject to the Law on Tonnage Tax of 24 August 2006.

The above provisions indicate that revenue derived from these activities is not subject to income tax, i.e. it is free from this tax. According to the European concept of a common consolidated corporate tax base, the tax base is calculated by deducting non-taxable revenue, deductible expenses and other deductible items. Apart from the definition, a normative interpretation of specific rules for its determination is proposed. It is stated that income is calculated according to the following general principles:

– the accrual basis,

– gains and losses are recognized only when they are effective (principle of realization),

– taxable transactions and events are measured individually (the principle of individual valuation),

– income is calculated according to uniform rules, unless exceptional circumstances justify a change (consistency).[2]

The introduction of these rules would favourably distinguish the CCCTB proposals from those used in the Corporate Income Tax Act. The Polish solutions reflect the accrual basis in relation to taxable revenue and costs. The realization principle applies to revenue from interest and expenses, but it lacks a general reference to taxable profits and losses. The principles of individual valuation and consistency are also not strongly emphasized in Polish law.

The draft directive defines the concepts of revenues, profits and losses. The term "revenues" is defined as proceeds from sales and any other transactions, net of value added tax and other taxes and duties collected on behalf of government authorities, monetary or non-monetary, including proceeds from the disposal of assets and rights, interest, dividends and other distributions, proceeds from liquidation, royalties, subsidies and grants, gifts received, compensation and *ex gratia* payments. Revenues also include in-kind donations made by the taxpayer. Reve-

[2] See Draft directive Art. 9 General principles: 1. When calculating the tax base only effective gains and losses are taken into account. 2. Transactions and taxable events are measured individually. 3. The calculation of the tax base is carried out in a uniform manner, unless exceptional circumstances justify a change in the method of calculation. 4. Unless otherwise provided, tax base is determined for each tax year. Unless otherwise provided, tax year is any period of twelve months. Also WP/066/2008, p. 2, item 5.

nues do not include equity raised by the taxpayer or debt repaid to the taxpayer. "Profit" is defined as an excess of revenues over deductible expenses and other deductible items in a tax year; "loss" means an excess of deductible expenses and other deductible items over revenues in a tax year.

It is worth emphasizing that in accordance with the draft Directive taxation applies not only to non-monetary donations collected by the recipient, but also those transferred by the recipient. As regards the donor, it is, in fact, bogus revenue, resulting from the false declaration that the donated item was donated but was sold according to its market value. In this way, the tax covers the so-called hidden reserves, i.e. income equal to the difference between the market value and the book value of a donation [Marciniuk 2010: 246-247]. In the Corporate Income Tax Act there are no solutions requiring the taxation of the donor, hence the solutions contained in the draft Directive may be considered to be less favourable for Polish enterprises. Such an approach to the valuation of monetary donations received by the recipient is based on Art. 22 of the draft directive *Valuation*, which states that:

"1. For the purposes of calculating the tax base, the value of transactions is established on the basis of: [...]

b) their market value, if all or part of the benefit from the transaction is non-monetary;

c) their market value for monetary donations received by the taxpayer;

The list of exemptions from income tax contained in the draft Directive is relatively short. Article 11 *Exempt revenues* reads:

The following revenues are exempt from corporate tax:

a) subsidies directly related to the acquisition, manufacture or improvement of fixed assets subject to depreciation in accordance with Art. 32-42;

b) proceeds from the sale of pooled assets referred to in Art. 39 § 2, including the market value of in-kind donations;

c) received profit distributions;

d) proceeds from the disposal of shares;

e) income from a permanent establishment in a third country."

Exemption from tax should also apply to income from dividends, proceeds from the disposal of shares in the company outside the group and profits from foreign establishments. By granting relief for double taxation, the majority of Member States exempts dividends and proceeds from the disposal of shares, thus avoiding the necessity of calculating the amount to be deducted for tax paid abroad, in particular when while calculating the vested deduction, one must take into account the amount of corporate tax paid by the company paying the dividend. The exemption of income earned abroad meets the same requirement of simplifying the system.

In a survey conducted to examine the importance of the common consolidated tax base for Polish and European companies, questions were asked regarding the

Table 1. The importance of non-tax revenues for Polish businesses
(0 – insignificant; 5 very significant) (in %)

Category	0	1	2	3	4	5	No answer	Total
Revenues from forestry and agricultural activities	92.86	0.00	0.00	0.00	0.00	3.57	3.57	100.00
Accrued but not received interest on receivables, bank deposits and so on.	66.07	16.07	7.14	3.57	1.79	1.79	3.57	100.00
Foreign exchange gains established at the balance sheet date but unrealized	69.64	8.92	5.36	1.79	5.36	5.36	3.57	100.00
Dividends and other revenues from participation in profits of legal persons	80.36	1.79	3.57	8.92	0.00	1.79	3.57	100.00
Returned taxes, charges and expenses not included in KUP	69.64	17.85	5.36	1.79	1.79	0.00	3.57	100.00
Interest received on excess payment of tax	82.15	8.92	5.36	0.00	0.00	0.00	3.57	100.00
Grants, subsidies, payments received to cover the costs or as reimbursement of expenses	87.50	7.14	1.79	0.00	0.00	0.00	3.57	100.00
Income earned from foreign governments derived from non-returnable aid	92.85	1.79	0.00	0.00	1.79	0.00	3.57	100.00
Revenues generated from the economic activity of the SEZ	94.64	1.79	0.00	0.00	0.00	0.00	3.57	100.00
Income from real estate made available free of charge	94.64	1.79	0.00	0.00	0.00	0.00	3.57	100.00
Revenues established by decision of the Head of the Tax Office	94.64	1.79	0.00	0.00	0.00	0.00	3.57	100.00

Source: based on survey data.

significance of revenues other than tax income. The survey results are also very interesting from the point of view of simplifying the Polish tax system (Table 1).

The analysis of the data contained in Table 1 shows that income not regarded as tax revenues plays a highly insignificant role. This may be due to the fact that many of these exemptions are specific and relate to specific companies, e.g. in agricultural production and forestry activities in special economic zones. These entities were relatively few in the total group of companies surveyed.

2. Cost of Acquiring Revenue

The provisions of the Corporate Income Tax Act do not contain a strict list of expenses that are treated as deductible costs. [Litwińczuk 2011]. According to the Act, deductible expenses are costs incurred to generate revenue or maintaining or securing sources of income, apart from the costs which are listed in the Act as not deductible.[3] A literal interpretation of this provision leads to the conclusion that all incurred expenses, excluding those restricted by law,[4] are tax deductible costs as long as they remain in the causal link with revenues, including those aimed at maintaining or securing the functioning of the source of revenue. The provisions of the Act show that it is possible to recognize as deductible costs these expenditures, which – judging rationally – can help to create or increase the company's revenue, provided that the expenditure has not been excluded from such costs. In the jurisprudence of administrative courts and tax authorities have perpetuated the notion that costs within the meaning of the Corporate Income Tax Act may include those expenses that are in a causal relationship to the economic activity and the revenue obtained from it.

While defining deductibles for tax purposes one should not use the definitions contained in other laws, e.g. the Accounting Law. The definitions presented in the theory of economics and finance, and accounting law do not apply to tax law and for the purposes of interpretation of the texts of acts of tax law, one should only use the definition of tax expense in Art. 15 § 1 of the Corporate Income Tax Act.[5]

The wording of the provision on deductible expenses enables the company to deduct any cost provided that there is a direct or indirect connection with the activities and the expense has or may have an impact on the amount of income earned. Therefore, tax deductible costs are all rationally and economically reasonable expenses associated with running a business whose goal is to achieve the protection and preservation of sources of income.

The most important prerequisite that must be met for a certain expense to be recognized as tax deductible is that there should be a causal relationship between the expense and the revenue. This involves such a relationship that incurring the cost has an impact on the generation or increase of revenue. In its ruling, the court stated: undoubtedly the cost of revenues must be related to a specific source of revenue, i.e. the amount of income from that source is affected by the costs incurred in order to obtain revenue, i.e. there must be a causal relationship between

[3] Expenses that are not deductible for tax purposes are defined by the legislator in Art. 16 § 1 of the Corporate Income Tax Act.

[4] The basic condition for the recognition of the expense as a deductible cost is the absence of this expense in the catalog of expenditures that are not recognized by the legislature as deductible costs. A list of these expenditures is set out in the Corporate Income Tax Act.

[5] The exception is made when the lawmaker refers directly to the provisions of other acts.

expenses incurred and the actual resulting income or the possibility of obtaining that income.

Tax-deductible costs directly related to revenues include costs which directly affect the revenue acquired from that source. This includes all costs which are essential for the specified source of revenue to bring specific profits. To recognize an expense as tax deductible it is not always necessary to demonstrate a direct link between it and the revenue. It should be noted that deductible costs include all expenses incurred in order to obtain revenue, including those incurred in order to maintain and secure a source of income, so that this source of revenue brings income in the future as well. Therefore, deductible costs will also include indirect costs associated with the revenue obtained, if it is shown to have been reasonably incurred in order to obtain revenue (including expenses to ensure the functioning of the source of revenue), even if the revenue is not achieved for objective reasons.

Deductibles therefore include expenses that meet the following conditions:

– were incurred by the taxpayer, i.e., in the final analysis, it must have been covered with the taxpayer's resources,

– are definitive (actual), i.e. the value of expenses incurred has not been reimbursed to the taxpayer in any way,

– remain in connection with the economic activity of the taxpayer,

– were incurred in order to obtain revenue, or maintain or secure the sources of income,

– are properly documented,

– are not included in the list of non-deductible expenses in accordance with the provisions of the Act.

It should also be noted that the definition given by the legislator is very general. Therefore, every expense incurred by the taxpayer should be analysed separately for purposes of legal qualification, except when it is either explicitly associated with the category of deductible expenses or clearly cannot be included in this category. The Supreme Administrative Court ruled that:

In determining deductible costs, every expense – other than those expressly set out in the Act – should be individually assessed to establish a direct relationship with revenue and the rationality of action to achieve this revenue. Situations, in which this causal relationship is not clear, should therefore be solved according to the principles of rational reasoning, individually for each case.

Expenses not recognized by the legislature as tax deductible costs can be divided into three groups:

– expenses that are not included in the cost of revenues beyond defined limits or when no distinct conditions are met,

– expenses which, by their nature, are not deductible for tax purposes, but in certain circumstances are recognized as such,

– expenses which are absolutely not deductible.

Within these three groups of costs not regarded as deductible costs, one can distinguish the following groups:

a) expenditure associated with purchasing and modernizing fixed assets and intangible assets;

b) losses and penalties, including e.g.:
– loss of prepayments, advances and down payments,
– interest, contractual penalties and damages,
– enforcement costs, fines, penalties;

c) liabilities and reserves, including e.g.:
– overdue receivables,
– reserves created on the basis of the Accounting Law;

d) taxes;

e) expenditure on the operation of cars not included in fixed assets;

f) other expenses, including e.g.:
– costs associated with tax-free income,
– representation expenditure.

The definition of deductibles included in the draft CCCTB directive (on a common consolidated tax base) differs from that adopted in the corporate income tax. According to the draft directive "deductible costs include any costs incurred by the taxpayer for business purposes related to the achievement, maintaining or securing income, including costs of research and development work and the costs of increasing the capital or debt for commercial purposes" (Art. 12 of the draft directive Deductible expenses).

It follows that the deductible cost of doing business should normally include all costs related to sales and costs associated with achieving, maintaining and securing income. The deduction also covers costs of research and development and costs incurred in raising own or foreign equity for business purposes. The supplement on deductible costs in the draft directive stipulates that "tax-deductible costs also include donations to charities specified in Art. 16, established in a Member State or in another country covered by the agreement on the exchange of information on request, comparable to the provisions of Directive 2011/16/EU. The maximum amount of deductible costs related to contributions or monetary donations to charities is 0.5% of revenue in the fiscal year."

In the analysis of deductible costs in the calculation of income tax and the CCCTB concept, it is extremely important to consider the cause-and-effect relationship between income tax and the cost of its acquisition. The draft directive stipulates that deductible costs are "costs incurred by the taxpayer for commercial purposes related to the achievement, maintenance or protection of revenue." This condition, referred to as the "economic purpose test" is ambiguous [Kubacki 2012: 39] and imprecise. As indicated earlier, the Polish law requires that every cost incurred by the company should be analysed individually, especially so-

called indirect costs associated with maintaining sources of income. However, even a thorough analysis does not eliminate tax risks arising from the fact that the assessment made by the tax authority may be different from the subjective assessment of the taxpayer. Consequently, questions whether a given cost can be regarded as a deductible are often decided by courts. In one of its rulings, the Supreme Administrative Court stated "To classify an expense as a deductible cost it is not enough to hope that such income will one day be achieved. Each entrepreneur acting professionally must analyse their own actions, and not just hope that they will prove to be beneficial."

The risk of an erroneous classification of a cost as a deductible is also evident in the wording contained in the draft Directive. Because the wording is imprecise it may necessary for a court to establish whether the cost incurred by a company was "economically purposeful." However, it should be emphasized that the draft Directive contains a provision that "deductible costs are considered as such if they are incurred by the taxpayer for business purposes." This wording is still more flexible than that contained in the Corporate Income Tax Act.

The draft directive also allows for pro rata write-downs due to the depreciation of fixed assets.

Article 14 of the draft directive lists the costs that are not deductible. These include e.g.:

– distributed revenues and repayments of equity or debt,

– 50% of entertainment costs,

– the transfer of retained profits to a reserve which forms part of the company's equity,

– corporate tax,

– bribes,

– fines and penalties paid to a public authority for breach of any legislation,

– costs incurred by the company in order to generate income exempt from taxation pursuant to Art. 11; such costs are fixed at a flat rate of 5% of that income, unless the taxpayer is able to demonstrate that he has incurred a lower cost;

While analysing deductible costs for income tax and the CCCTB concept, it is important to note how businesses perceive the burden of costs that are not deductible (Table 2).

The data contained in Table 2 indicate that for Polish companies costs that are not considered deductibles do not have much significance. The least important categories include fines and penalties, enforcement costs and interest expenses, commissions and foreign exchange differences on loans. In contrast, the cost of interest on loans granted by shareholders has a greater importance for taxpayers.

It is important to note the provision stating that revenue, expenses and all other deductible items shall be recognized in the tax year in which they were achieved or incurred. It follows that costs are deducted in the tax year in which

Table 2. The importance of non-deductible costs for Polish businesses in income tax (0 – insignificant; 5 very significant) (in %)

Category	0	1	2	3	4	5	No answer	Total
Expenses for the purchase of land or the right of perpetual usufruct of land	66.07	10.71	8.93	1.79	0.00	8.93	3.57	100.00
Costs related to the operation of a car to the extent determined by the value of the car exceeding the equivalent of 20,000 Euro	60.72	12.50	8.93	7.14	3.57	3.57	3.57	100.00
Repayment of loans (credits), excluding capitalized interest on these loans (credits)	46.43	21.42	8.93	8.93	1.79	7.14	5.36	100.00
Interest on liabilities accrued but not paid or written off, including loans	62.50	16.06	1.79	3.57	8.93	1.79	5.36	100.00
Interest, fees and currency exchange differences on loans (credits that increase the cost of investment in development)	73.22	7.14	3.57	1.79	3.57	7.14	3.57	100.00
Enforcement costs related to defaults	75.00	14.29	3.57	0.00	3.57	0.00	3.57	100.00
Fines and penalties	76.78	10.71	5.36	1.79	1.79	0.00	3.57	100.00
Debts written off as overdue	58.93	19.64	3.57	0.00	3.57	1.79	12.50	100.00
Interest on late payment of overdue budget payments and other	55.36	32.14	5.36	3.57	0.00	0.00	3.57	100.00
Reserves formed in accordance with the provisions of the Accounting Act	62.50	7.14	10.71	3.57	5.36	1.79	8.93	100.00
Representation costs	55.36	32.14	5.36	3.57	0.00	0.00	3.57	100.00
Depreciation write-offs calculated for tax purposes more quickly than for accounting purposes	62.50	7.14	10.71	3.57	5.36	1.79	8.93	100.00
Interest on loans granted by shareholders	44.64	25.00	16.07	1.79	3.57	3.57	5.36	100.00
Revaluation of assets in the accounting books	71.42	1.79	12.50	5.36	3.57	1.79	3.57	100.00

Source: author's own calculation based on surveys.

they are incurred. A deductible cost is incurred when the following conditions are met: firstly – there is an obligation to make payments; secondly – the amount

of liability can be determined with reasonable accuracy; thirdly – in the case of trading goods, there is a transfer of significant risks and rewards of ownership of goods to the taxpayer, while in the case of services- the services are received by the taxpayer. It should be stressed that the proposed solution can be implemented in the Polish law on corporate income tax.

3. Common Consolidated Corporate Tax Base – fundamental assumptions

The document entitled "A Common Consolidated EU Corporate Tax Base"[6] published on 7 July 2004 includes the assumptions of the concept aimed at reducing costs and barriers to business activity in the European Union. On 16 March 2011[7] the European Commission submitted a proposal for the directive on a Common Consolidated Corporate Tax Base (CCCTB). According to the proposal, the main goal of the concept is to eliminate at least some major tax problems impeding economic growth in the EU single market. Due to the lack of uniform corporate tax regulations, interdependence of domestic tax systems often results in double taxation. Hence, enterprises have to deal with heavy administrative burdens and high costs associated with conforming to tax regulations. Such a state of affairs discourages companies from making investments in the EU and consequently hinders the achievement of priorities included in "Europe 2020" – a strategy for smart, sustainable and inclusive growth.[8]

The Common Consolidated Corporate Tax Base is a major initiative designed to eliminate obstacles to the creation of a single market.[9] It is believed[10] that this

[6] A Common Consolidated EU Corporate Tax Base, Commission Non-Paper to informal Ecofin Council, 10 and 11 September 2004, http://ec.europe.eu/taxation_customs.

[7] Proposal for a Council Directive on a Common Consolidated Corporate Tax Base of 16 March 2011{SEC(2011) 315}{SEC(2011) 316}.

[8] The strategy is aimed at smart, sustainable and inclusive growth. The Strategy Europe 2020 has defined the following three inter-related priorities:

– smart growth: development of the economy based on knowledge and innovation;

– sustainable growth: supporting the economy based on a more efficient use of resources, more environmentally friendly and more competitive;

– inclusive growth: supporting the economy characterized by a high employment rate, providing social and territorial cohesion.

Cf. Communication from the Commission EUROPE 2020 A strategy for smart, sustainable and inclusive growth – COM(2010) 2020 Brussels 3.3.2010.

[9] Communication from the Commission Towards a Single Market Act – For a highly competitive social market economy – 50 proposals for improving our work, business and exchanges with one another – COM(2010) 608 Brussels 27.10.2010.

[10] Communication from the Commission Annual Growth Survey: advancing the EU's comprehensive response to the crisis, COM(2011) 11 Brussels 12.01.2010.

initiative designed to stimulate growth should be undertaken in the first place in order to facilitate economic development and create new jobs. The CCCTB concept would guarantee the coherence of domestic tax systems but not the harmonisation of tax rates. According to the proposal, tax rates ought to be subject to fair competition. Different rates enable particular countries to maintain a certain level of tax competition within the internal market. Furthermore, fair competition based on tax rates provides a greater transparency and allows Member States to take account of the competitiveness of their markets and budgetary requirements while determining tax rates [Iwin-Garzyńska 2013: 208].

Supporting research and development is one of fundamental objectives included in the directive. As part of the Common Consolidated Corporate Tax Base, all costs associated with R&D are tax deductible expenses. For enterprises that decide to adopt the system, such an approach will be an incentive to continue investment in research and development. In case of economic losses which are subject to cross-border compensation, consolidation within the framework of CCCTB will contribute significantly to reducing the tax base. Nevertheless, the implementation of CCCTB will expand the average EU tax base mainly due to the option taken as far as the depreciation of assets is concerned.

The introduction of CCCTB would reduce or even eliminate barriers to conducting cross-border activity in the European Union. This is of profound importance to enterprises, regardless of their size. In the case of small and medium-sized companies, costs involved in adjusting the activity to regulations imposed in particular countries are a major barrier. Compared to the turnover of such firms, these costs are an important item. As for large enterprises, the possibility of cross-border settlement of tax losses is the main advantage of the new solution.

A system will be chosen voluntarily. Since not all enterprises conduct their activity abroad, CCCTB will not require companies which do not intend to expand their business outside their homelands to cover costs associated with adopting a new tax system. Only methods for determining tax base will be subject to harmonisation. It will not be the case with financial statements. Therefore, Member States will still apply domestic principles of financial accounting, and CCCTB will impose autonomous regulations on calculating corporate tax base. These regulations will not exert any effect on producing annual and consolidated financial reports. As for CCCTB, certain enterprises would have to follow uniform tax rules (applicable in the entire European Union) and would deal with single tax administration (one-stop shop). Having decided to apply a common consolidated corporate tax base, the company is no longer subject to the domestic corporate tax system as far as all the issues regulated by joint regulations are concerned. Enterprises conducting activity in more than one state will benefit from the possibility of cross-border loss relief and lowering costs of conforming to corporate tax regulations. The possibility of a direct consolidation of profits and losses for the pur-

pose of calculating the EU tax base is a major step toward reducing overtaxation in a cross-border context. At the same time, it is a step toward improving the existing conditions, namely in the scope of tax neutrality of domestic and cross-border activity. This will lead to a more effective fulfilment of internal market potential.[11]

The main advantage of implementing CCCTB for enterprises is the reduction of costs associated with observing tax regulations. Data published by the European Commission indicates that the introduction of the aforementioned concept may lower such costs by circa 7%. An actual reduction of the costs under discussion may have a major impact on enterprises' potential and willingness to expand their business and enter foreign markets (especially companies that have so far operated only in regional markets).[12]

The CCCTB directive provides a complete set of corporate tax regulations. It specifies the principles of opting for the consolidated system, the method of determining the tax base, the scope of relief and methods. Furthermore, it introduces regulations to combat fraud, proposes a method for the apportionment of the consolidated base, and specifies how the CCCTB system is to be administered by the Member States in line with the "one-stop shop" principle.

Conclusions

The income tax system, both in Poland and in the European Union, is in need of repair. The need to improve the Polish system is motivated by the progressive erosion of the tax law and the poor quality of legislation. The Union requires uniformity in this respect in order to become competitive with China, Russia, and the United States. Currently, EU countries do not constitute a single entity in terms of corporate income tax, but 27 different players which compete with one another within the EU and beyond. The aim of the tax reform should be to harmonize the system of corporate income tax for all companies within the EU in order to ensure comparable working conditions in terms of income tax, and a unified system that is transparent to non-EU companies. According to the idea of the CCCTB concept, unification will include the tax base, namely the principle of determining revenues and tax deductible costs.

[11] Calculations concerning multinational enterprises operating in the EU indicate that about 50% of multinational financial groups and 17% of multinational non-financial groups may receive direct compensation for cross-border losses.

[12] Cf. COUNCIL DIRECTIVE on a Common Consolidated Corporate Tax Base (CCCTB); Brussels, COM(2011) 121/4, 2011/0058 (CNS) {SEC(2011) 315}{SEC(2011) 316}. According to the estimates made by the European Commission, a new regulation would enable the European Union to save about 700 million euro annually in costs associated with adjusting to other fiscal systems, about 1.3 billion euro as a result of the consolidation of calculation rules, and nearly 1 billion euro in cross-border activity. Experts are inclined to believe that such a solution would increase the attractiveness of the EU as a location of large-scale investments.

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Stabilizacja podatkowa w podatku dochodowym od osób prawnych w Unii Europejskiej

Streszczenie. *W opracowaniu omówiono istotę podatku dochodowego od osób prawnych, a także streszczono przepisy polskiego prawa podatkowego w zakresie podatku dochodowego od osób prawnych oraz zestawiono je z projektem dyrektywy CCCTB. Przeprowadzono analizę przychodów podatkowych i kosztów podatkowych ze szczególnym uwzględnieniem przychodów niestanowiących przychodów podatkowych i kosztów niestanowiących kosztów uzyskania przychodu. Ponadto przedstawiono wyniki badań ankietowych. Ankiety zostały przesłane do 1000 polskich firm podlegających opodatkowaniu podatkiem dochodowym od osób prawnych. Podmioty gospodarcze wybrano losowo spośród wszystkich firm w Polsce. Ankiety przesłano również do 500 przedsiębiorstw w UE, głównie w Niemczech, Wielkiej Brytanii, Francji, Holandii, Włoszech i Czechach. Na ankietę odpowiedziało łącznie 112 polskich przedsiębiorstw i 50 zagranicznych. Zarówno wśród polskich, jak i zagranicznych podmiotów, które odpowiedziały na ankietę, dominowały spółki z ograniczoną odpowiedzialnością oraz spółki akcyjne. Zasadnicza część badania została przeprowadzona w latach 2010-2011; w 2012 r. badanie powtórzono, a kolejne 200 ankiet wysłano do polskich firm, z których odpowiedziało 15.*

Słowa kluczowe: *finanse, finanse przedsiębiorstw, podatek dochodowy od osób prawnych, stabilizacja podatkowa, koncepcja CCCTB*

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CFC Legislation and Tax Planning from the Polish Perspective

Abstract. *In accordance with the European directive against tax avoidance (ATAD), all Member States of the European Union (EU) have to adopt the legislation tackling controlled foreign companies (CFC) as tax planning vehicles. This EU directive is an outcome of the recommendations worked out in 2015 by the Organisation for Economic Cooperation and Development (OECD) as part of the project addressing tax base erosion and profit shifting (BEPS). Against the background of the "hastily" introduced CFC legislation in Poland, this article investigates the advantageousness of tax planning through a CFC, especially for Polish corporations as shareholders, by comparing the tax burden before and after tax optimisation. Although the corporate income tax (CIT) rate in Poland is relatively low compared to other OECD countries, there is a fiscal risk associated with tax planning in Poland because of a very low tax level in some non-OECD jurisdictions, significantly reduced rates on certain types of income and opportunities for tax deferral. When compared to the OECD recommendations and the ATAD requirements, the Polish CFC legislation has some drawbacks. The thresholds for the exemption of the CFC income (of 50% and 10%) as well as the non-inclusion of shares held by associated enterprises do not fulfil the requirements of the ATAD. Moreover, the benchmark for the low tax should refer to the effective tax burden rather than the statutory tax rate. Nevertheless, the recent tax law amendments in Poland eliminate the aforementioned non-conformities with the ATAD and thus must be viewed positively. Regarding the profit repatriation, the approach for elimination of double taxation remains unclear.*

Keywords: *ATAD, BEPS, CFC, corporate income tax, Poland, tax planning, tax rate*

Introduction

Half a century since the anti-avoidance rules on controlled foreign companies (CFC) were first adopted in the U.S., the CFC legislation has attracted attention, becoming one of the issues of the initiative against base erosion and profit shifting (BEPS) of the Organisation for Economic Cooperation and Development (OECD). Following the BEPS project, in 2016 the European Union (EU) adopted the directive against tax avoidance (ATAD), which enforces – among others – the implementation of CFC rules. Against this background and prior to the final OECD recommendations on BEPS as well as the enactment of the ATAD, the CFC legislation was introduced in Poland.

Due to the "hasty" action of the Polish legislator, the question arises whether Poland faces a considerable risk regarding tax planning through a CFC and whether the adopted rules are compliant with the OECD recommendations and the requirements of the ATAD. Since the BEPS project focuses on corporations and the ATAD applies to taxpayers that are subject to corporate income tax (CIT), this article deals with the CFC legislation of the Polish CIT Act. However, it is noteworthy that similar rules also apply to individuals under the Polish personal income tax.

The remainder of this article is structured as follows. Section 2 discusses the CFC as a tax-planning vehicle by comparing the tax burden under and without profit shifting to such foreign entities, with particular regard to the Polish perspective. In this context, tax deferral and dividend taxation are analysed. Section 3 examines the Polish CFC legislation in the context of the building blocks proposed within the framework of the BEPS project (the definition of a CFC, exemptions and threshold requirements, the definition, computation and attribution of income, prevention and elimination of double taxation), in reference to the OECD recommendations and the ATAD, which serves as the benchmark. Finally, Section 4 concludes the article.

1. Tax Planning throught a CFC

Tax planning through a CFC can be demonstrated by means of the following example. Let us assume corporation *P* in country *A* that levies a CIT at the rate τ_A. Since the corporation has unlimited tax liability in country *A*, its overall profit of 1 leads to a tax burden of τ_A.[1] For the purpose of lowering its tax burden,

[1] This applies under the assumption that foreign profits are subject to an (effective) tax rate of τ_A or less in the source country and that country A provides a tax credit as a method to avoid double taxation.

corporation *P* establishes subsidiary *S* in country *B* with a lower tax rate of τ_B ($< \tau_A$) and channels the whole earnings to foreign corporation *S*. At this stage of the tax-planning scenario, exit taxation has to be taken into account if the profit shifting requires a transfer of assets from *P* to *S*. The tax burden depends – among others – on the amount of attributable hidden reserves. However, leaving the exit tax as well as further transaction costs out of consideration, the benefit of tax optimisation is the outcome of the difference of the tax rates in countries *A* and *B*.

A comparison of the combined CIT rates in the OECD countries reveals a relatively low tax burden for Polish corporations and thereby a rather weak incentive for tax planning trough a CFC (Chart 1).

Nevertheless, effective – rather than staturory – tax rates must be taken into consideration. For instance, the relatively high tax rate of approximately 34% in Belgium does not account for the Belgian notional allowance for corporate equity, which may significantly lower the effective tax rate of the corporate profit. Another example is Hungary, where turnover-based local business tax, innovation

Chart 1. Combined CIT rate 2017 in OECD countries

Combined CIT rate is the basic combined central and sub-central (statutory) CIT rate given by the central government rate (less deductions for sub-national taxes) plus the sub-central rate.

Source: own compilation based on OECD 2017c.

tax, bank levy and surtax on the energy sector are not included in the very low rate of 9%. Moreover, Chart 1 does not account for reduced tax rates applied – among others – under the intellectual property (IP) Box regimes.[2] Furthermore, non-OECD countries like Bahamas, Bermuda or Cayman Islands without a corporate tax burden are not included [KPMG 2017]. According to the Polish Ministry of Development, high levels of foreign direct investment in Cyprus and Switzerland are triggered by tax planning of Polish investors [MR 2017: 9; cf. Kuźniacki 2017].

However, the tax treatment of the profit distribution to parent corporation *P* has not been tackled to date. This is relevant since tax planning should not (negatively) affect the initial opportunity of *P* to pay a dividend to its shareholders or reinvest its capital. By considering the repatriation, the entire tax burden after tax optimisation can be calculated. Assuming a dividend from the subsidiary to *P* of $1 - \tau_B$, which is the shifted profit after taxation in country *B*, the overall tax burden is

$$\tau_B + (1 - \tau_B) \times \tau_A \qquad (1)$$

whereby the dividend is subject to tax in the home country of the parent corporation and a tax credit for the lower dividend tax in country *B*, if any, applies. In the case that country *A* exempts intragroup dividends from taxation, the tax burden decreases to

$$\tau_B + (1 - \tau_B) \times \tau_B^D \qquad (2)$$

where τ_B^D denotes the withholding tax in the source country, which is usually limited in accordance with provisions of double tax agreements. If country *B* follows country *A* and also exempts the dividend, the overall tax burden is equal to τ_B, which leads again to the tax rate difference between country *A* and *B* as a relevant yardstick for tax planning.

Essentially, the dividend income is subject to the Polish CIT, which induces double taxation of corporate profit. In order to tackle this shortcoming, some countries exempt dividend income from the CIT. Through the implementation of the Parent-Subsidiary Directive [EU 2011] in Poland, such an exemption was introduced – among others – for dividends from foreign corporations with unlimited CIT liability in one of the member countries of the European Economic Area (EEA) or Switzerland if the Polish parent corporation holds at least 10% (25% for Switzerland) in the capital of the distributing company (Art. 20 of the Polish CIT Act[3]). The last-mentioned condition is assumed to be fulfilled in the case of

[2] For an overview of IP Box regimes in Europe, see Evers, Miller & Spengel 2015: 506.

[3] Corporate Income Tax Act, Journal of Laws, no. 21, item 86 as amended (ustawa z dnia 15 lutego 1992 r. o podatku dochodowym od osób prawnych, Dz.U. nr 21, poz. 86 z późn. zm.).

a C(ontrolled)FC. This tax exemption enhances the attractiveness of tax planning within the EEA.

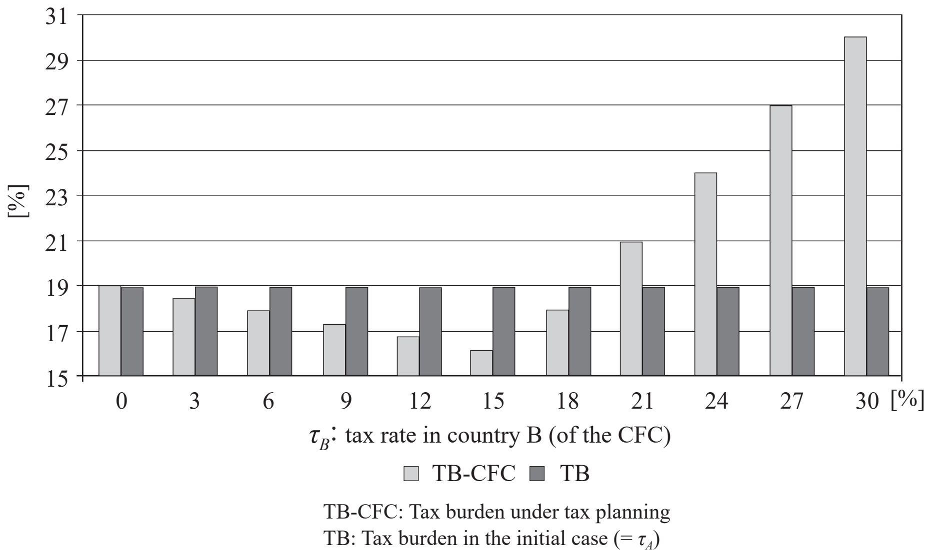
Apart from the exemption, a foreign tax credit is granted, which can be implemented in two ways. The general tax credit for the foreign (withholding) tax on the dividend is appropriate to combat international double taxation of dividend income, although it does not prevent double taxation of distributed and already-taxed profit. Thus, the extended (indirect) tax credit refers to the CIT paid by the distributing company on its profit. Disregarding the withholding tax in the source country, due to the tax credit, the tax burden is reduced as follows:

$$\tau_B + MAX[(1-\tau_B) \times \tau_A - \tau_B; 0] = \begin{cases} (1-\tau_B) \times \tau_A \; if \; \tau_A \geq \dfrac{\tau_B}{1-\tau_B} \\ \tau_B \qquad if \; \tau_A < \dfrac{\tau_B}{1-\tau_B} \end{cases} \tag{3}$$

Interestingly, as far as $\tau_A \geq \frac{\tau_B}{1-\tau_B}$ is fulfilled, the overall tax burden decreases with the increasing tax rate in the country of the CFC $\frac{\partial(1-\tau_B) \times \tau_A}{\partial \tau_B} < 0$.

Chart 2 shows this paradox, which is caused by the deduction of the foreign tax on the CFC's profit, whereby the reduced profit in the form of the dividend is subject to the Polish CIT. On the contrary, the application of the indirect foreign

Chart 2. Tax burden without and under tax planning through a CFC



TB-CFC: Tax burden under tax planning
TB: Tax burden in the initial case (= τ_A)

Source: calculations based on formula (3).

tax credit implies an adjustment of the taxable dividend by the amount of the foreign tax (grossed up dividend, IBFD 2014: 1268).

Nevertheless, the application of the extended tax credit requires an unlimited CIT liability of the distributing company in a country where a double tax agreement with Poland is in place. Including the EEA countries and Switzerland, this applies to over 90 countries [MF 2017]. Furthermore, the Polish company must own at least 75% of the capital of the foreign corporation, which constitutes a significantly higher threshold in comparison with the 10% requirement for the dividend exclusion. The indirect foreign tax credit reduces the tax burden up to approximately 16% (Chart 2), which is not substantially below the baseline Polish tax rate of 19%.

Thus far, given the relatively low Polish tax rate compared to other OECD countries, there seems to be no strong incentive for Polish corporations to use a CFC as a tax-planning vehicle. However, assuming an immediate dividend payment to the parent company, the opportunity to postpone the profit distribution has been neglected. A reinvestment at the level of the CFC may restrict the scope for dividend distribution from the parent company to its shareholders.[4] The latter one would – if necessary – have to sell its shares to achieve access to profits. Regarding the investment activity of the parent company, the transfer of the capital from the CFC to its parent can be conducted in the form of debt. Taking into consideration thin capitalisation rules, the tax advantage can be increased provided interests are deductible at a higher rate from the profit of the parent corporation and are taxable at a lower tax rate in the country of the CFC. In the case where the source country levies CIT only on distributed profits, like Estonia [PWC 2016: 653], the profit retention defers not only the dividend taxation, but also the taxation of CFC income.

Assuming that the reinvests its profit at the rate r over n periods, the after-tax dividend distributed to the parent company in the last period is:

$$(1 - \tau_B) \times [1 + r \times (1 - \tau_B)]^n \times (1 - \tau_A) \tag{4}$$

However, if the tax planning is not in place and the same pre-tax rate of return of r is achievable by the parent, the after-tax profit in the n-th period is:

$$(1 - \tau_A) \times [1 + r \times (1 - \tau_A)]^n \tag{5}$$

Tax planning is advantageous if the after-tax dividend from the CFC exceeds the after-tax profit yielded directly by the parent (4) > (5).

Table 1 displays the benefits of tax planning for a Polish parent as a ratio of the aforementioned profit difference to the net profit without tax planning:

[4] The threshold for distributable profits is regulated in Art. 348 of the Polish Code of Commercial Companies, Journal of Laws no. 94, item 1037 as amended (ustawa z dnia 15 września 2000 r. Kodeks spółek handlowych, Dz.U. nr 94, poz. 1037 z późn. zm.).

$$\frac{(1-\tau_B) \times [1 + r \times (1-\tau_B)]^n \times (1-\tau_A)}{(1-\tau_A) \times [1 + r \times (1-\tau_A)]^n} - 1 \tag{6}$$

Table 1. Benefits of tax planning through CFC (in %)

τ_A = 19%		*n*				
r	τ_B (%)	0	5	10	15	20
5%	0	0.00	4.65	9.51	14.61	19.93
	2	–2.00	2.07	6.31	10.72	15.32
	4	–4.00	–0.49	3.15	6.92	10.83
	6	–6.00	–3.03	0.04	3.20	6.47
	8	–8.00	–5.54	–3.02	–0.43	2.23
	10	–10.00	–8.04	–6.03	–3.98	–1.89
10%	0	0.00	9.10	19.03	29.87	41.69
	2	–2.00	5.95	14.55	23.84	33.89
	4	–4.00	2.85	10.18	18.04	26.46
	6	–6.00	–0.21	5.94	12.46	19.39
	8	–8.00	–3.22	1.80	7.09	12.65
	10	–10.00	–6.19	–2.22	1.92	6.23
	12	–12.00	–9.11	–6.13	–3.05	0.13
	14	–14.00	–11.99	–9.94	–7.84	–5.68

Explanations: τ_A and τ_B denotes the tax rate in the country of the parent and the tax rate in the country of the CFC, respectively. *n* is the number of periods and *r* the rate of return before tax.

Source: calculations based on Formula (6).

The opportunity for tax planning depends on the tax rate in the foreign country, the rate of return as well as the duration of the reinvestment [Arnold 1986]. Even if the repatriated profit in the form of a dividend from the CFC to its parent company is subject to tax in the parent country, a combination of a sufficient long reinvestment time, a high rate of return and low foreign tax burden makes a CFC a useful tax planning vehicle (Table 1).

2. CFC Legislation

Taking into account the advantage of tax deferral achieved through a CFC, the U.S. was the first country to introduce the CFC legislation in 1962, which aims to include CFC earnings in the taxable income of the parent and thereby eliminate the benefits associated with tax planning. Until now, many countries have followed the U.S. by implementing the CFC rules [OECD 2015: 9-10].

Recently, within the scope of the BEPS project, the OECD and G20 countries have dealt with this issue by setting the “Designing Effective Controlled Foreign

Company Rules" as one of the fifteen actions that address tax avoidance by means of artificial profit shifting to low or no-tax locations [OECD 2017a, 2017b]. Following the OECD BEPS conclusions and recommendations, the Council of the EU adopted the so-called Anti-Tax Avoidance Directive [EU 2016], which lays down minimum standards for anti-abuse legislation. Suddenly, during the work on the BEPS project and before enacting the ATAD, the CFC legislation was introduced in Poland. This "hasty" implementation entailed recent tax law amendments in Poland, which aim to achieve compliance with the ATAD (Fig. 1).

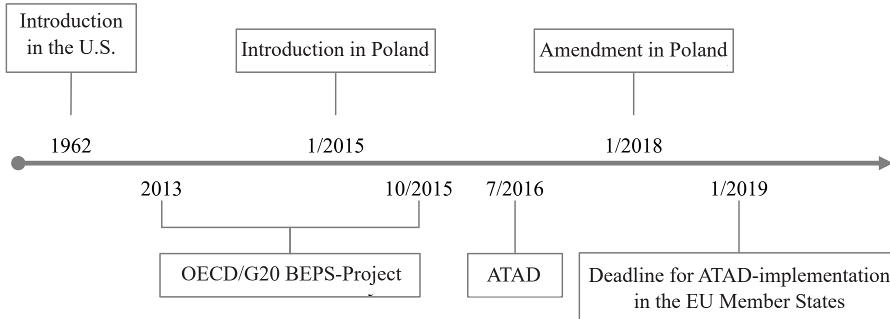


Figure 1. Development of the CFC legislation

Source: based on Rousslang 2000; OECD 2015; EU 2016.

In the light of the above, the design of Polish CFC rules should be analysed regarding the BEPS recommendation as well as the ATAD requirements. Following the BEPS final report on CFC legislation, the comparison is based upon six building blocks: 1. definition of a CFC, 2. CFC exemptions and threshold requirements, 3. definition of income, 4. computation of income, 5. attribution of income and 6. prevention and elimination of double taxation [OECD 2015: 9-10; for a similar analysis on the Nordic countries see Schmidt 2016].

3. Definition of a CFC

The OECD recommends a broad definition of a CFC that is not limited to corporations [OECD 2015: 21]. This is reasonable since not only a foreign corporation but also a foreign permanent establishment as well as a transparent entity may be used as a tax-planning vehicle, as far as the income that is attributable to the foreign entity is not subject to tax in the parent company jurisdiction. In particular, this applies to earnings generated by means of a foreign permanent establishment, which are exempt from taxation according to the respective double tax treaty. The ATAD definition set out in Art. 7 follows this concept. In accordance with Art. 24a

of the Polish CIT Act, a corporation or another company that is treated in its country as a corporation for tax purposes falls within the scope of the CFC legislation in Poland. The Polish CFC rules apply to a foreign permanent establishment if its earnings are excluded from the tax base in Poland.

Apart from the legal form, the relation between the domestic shareholder and the foreign entity is crucial for the CFC definition. Essentially, the OECD proposes 50% as a control threshold, and distinguishes between two types – the legal control and the economic control [OECD 2015: 21-24]. Consequently, the ATAD stipulates a 50% threshold, which refers alternatively to the voting rights, capital and profits. For this purpose, direct and indirect participation of the taxpayer as well as its associated enterprises have to be taken into account, as recommended by the OECD. The Polish legislator decided to define the CFC more broadly, which violates neither the OECD recommendations nor the ATAD, since the OECD explicitly allows a lower level of the control threshold [OECD 2015: 21] and Art. 3 of the ATAD emphasises that a higher level of protection for the domestic corporate tax base shall not be precluded by this directive. In accordance with Art. 24a of the Polish CIT Act, a CFC is defined as:

A foreign company domiciled in one of the territories practising a harmful tax competition. These jurisdictions are listed in the Regulation issued by the Minister of Development and Finance that includes countries like Mauritius, Monaco and Panama [MRiF 2017].

A foreign company domiciled in another country without an international agreement with Poland or the EU that would enable Polish tax authorities to receive tax information from the tax administration of this country.

A foreign company, provided that the tax payer owns directly or indirectly over a period of at least 30 days at least 25% of its capital, voting rights or profit share. Additionally, conditions regarding the type of income and the foreign tax burden have to be fulfilled. However, these will be discussed later.

In summary, the Polish control threshold of 25% is set at a significantly lower level than the 50% share required by OECD and EU, though both capture the cumulated shareholding (taxpayer together with its associated enterprises). The approach to the calculation of the indirect control interest increases the strictness of the Polish CFC legislation. Assuming that a Polish company A owns 10% of the shares of company B, which owns 25% of company C, an indirect shareholding of 2.5% (10% × 25%) between company A and company C can be calculated. This is significantly below the Polish control threshold and does not fulfil the OECD recommendation that the control threshold should be met at each level in the chain of ownership [OECD 2015: 29]. Nevertheless, company C can be recognised as a CFC of company A, since according to Art. 11 § 5b of the Polish CIT Act the highest size of the shareholding in the chain – and thus 25% – is relevant. Moreo-

ver, there is no threshold for the aforementioned black list countries and jurisdictions that do not participate in the tax information exchange.

According to the latest tax law amendments, the control threshold of 25% will be increased to 50%. Although the definition of the CFC is narrowed down, it is accompanied by a countermeasure in the form of the inclusion of shares owned by associated enterprises. Both adjustments are consistent with the ATAD.

4. CFC exemptions and threshold requirements

In order to design a targeted CFC legislation, entities that are unlikely to be used as a tax planning vehicle should not be affected by the CFC rules [OECD 2015: 33]. Obviously, there is no incentive to implement tax planning if the effective tax burden is not significantly lower than the tax burden in the shareholder's jurisdiction. Art. 7 of the ATAD implements this concept in a very clumsy way. The CFC rules should apply if "the actual corporate tax paid on [CFC] profits by the [foreign] entity or permanent establishment are lower than the difference between the corporate tax that would have been charged on the entity or permanent establishment under the applicable corporate tax system in the taxpayer's country and the actual corporate tax paid on its profits by the entity or permanent establishment."

Assuming a taxable profit of 1, this condition can be expressed as follows:

$$\tau_B < \tau_A - \tau_B \rightarrow \tau_B < 50\% \times \tau_A \tag{7}$$

where (conforming to the previous formulas):

τ_A – tax rate in the country of the shareholder,

τ_B – tax rate in the country of the CFC.

As shown in formula (7), the condition could be phrased more clearly: namely, the CFC rules apply if the effective tax burden of the CFC earnings is lower than 50% of the effective tax burden in the taxpayer's jurisdiction.

The Polish CFC rules regulate a higher threshold of 75% to define low taxation. Since this condition refers to the CIT rate of Art. 19 of the Polish CIT Act (19%), statutory and not effective tax rates seem to be crucial. In line with this opinion, the Administrative Court in Wrocław ruled that a Hungarian company could be recognised as a CFC for the purposes of the Polish CIT even if only part of the income is subject to a tax rate of 14.25% (75% × 19%) or lower [WSA 2016]. This ruling addresses the previously-applicable progressive CIT schedule in Hungary with tax rates of 10% and 19% [*Financial Times* 2016]. Against this backdrop, the recent amendment, according to which the amount of tax actually paid is relevant, must be judged positively. However, the Polish legislator adopted

the clumsy wording of the ATAD (cited above) and thus reduced the threshold for low taxation from 75% to 50%.

Apart from the benchmark for low taxation, the scope of the CFC rules may also be limited by a de minimis threshold under which the CFC income is not subject to tax in the parent´s jurisdiction. The BEPS final report does not contain a general recommendation on this issue, although it emphasises the opportunity to circumvent the CFC legislation by splitting the income among multiple foreign entities as well as the increasing complexity due to provisions that aim to prevent such circumvention (anti-fragmentation rule) [OECD 2015: 34].

Since the ATAD provides a minimum standard, it is not surprising that it offers options for non-application of the CFC rules. In accordance with Art. 7 § 3 of the ATAD, a Member State does not have to apply the CFC legislation on foreign entities if the passive income makes up no more than one-third of their entire earnings. Moreover, an exemption may be provided for financial undertakings if up to one-third of passive income comes from transactions with the taxpayer or its associated enterprises. § 4 of the aforementioned provision extends the option for non-distributed income from non-genuine arrangements if the accounting profits and the non-trading earnings do not exceed 750,000 EUR and 75,000 EUR, respectively, or the accounting profits do not exceed 10% of the operating costs.

Compared to the one-third threshold of the ATAD, the Polish legislator set a more generous threshold of 50% for the maximum share of passive income. Nevertheless, according to the recent amendements, this threshold has been adjusted to comply with the ATAD. Furthermore, the CFC rules do not apply if the CFC income does not exceed 250,000 EUR or if the CFC profit does not exceed 10% of earnings from a real economic activity. The circumstances that have to be taken into consideration regarding the assessment of the real economic activity are defined by the CIT law and they illustrate the complexity triggered by the CFC exemptions. Moreover, even if the 10% threshold seems to be in line with the ATAD specification, a closer look reveals that the ATAD refers to the costs (profit ≤ 10% × costs), whereas the Polish CFC rules address the earnings (profit ≤ 10% × earnings). Turning the Polish condition into: profit ≤ 10% × (profit + costs), leads to: profit ≤ 11.11% × costs and thereby a more generous exemption in comparison to its counterpart provided by the ATAD. However, effective from 1 January 2018, these non-application thresholds have been repealed in Poland.

5. Definition, computation and attribution of income

Obviously, a targeted definition of CFC income that results from profit shifting rather than a real economic activity is not easy to determine. The OECD recommends including such a definition into the CFC legislation, although it allows

national legislatures latitude concerning its design [OECD 2015: 43]. The ATAD specifies CFC income that should be included in the tax base of the parent company´s country in the form of a list of non-distributed passive income, such as interest, royalties, dividends as well as sales and services income from transactions with associated enterprises without adding a significant economic value. Alternatively, a less concrete definition may apply, according to which non-distributed CFC income arising from non-genuine arrangements with the essential purpose of obtaining a tax advantage should be taxed.

Like the EU directive, the Polish CIT Act defines CFC income by listing types of passive income, such as dividends, capital gains from disposal of shares, interests and royalties. Remarkably, while both the ATAD and the Polish CFC legislation include dividends, the OECD suggests including this type of income with caution, since dividends are exempt from taxation by many countries [OECD 2015: 44]. Nevertheless, the Polish dividend exemption is based upon the Parent-Subsidiary Directive [EU 2011] and thereby essentially applies for dividend distributions within the EU. In other words, if some dividends are subject to the CIT, then it is reasonable to include this type of income within the scope of the CFC legislation to avoid the shifting of dividend income towards a foreign entity. It is noteworthy that a dividend exemption abroad should not be considered as low taxation if it is due to the aforementioned EU directive. Contrary to the ATAD, the Polish CIT Act does not limit CFC income to non-distributed income. However, the Polish tax base has to be reduced by deducting the dividend received from the CFC and capital gain from the sale of CFC shares.

Regarding the computation of CFC income, the OECD recommends applying the rules of the parent's jurisdiction and limiting the offset of CFC losses [OECD 2015: 57]. In compliance with the first recommendation, both the ATAD and the Polish CIT Act require that income has to be calculated in accordance with the tax law of the taxpayer's jurisdiction. This approach is in line with the goal of the CFC legislation and complies with the taxation of foreign income in general (in a non-CFC case). Regarding the loss offset, the EU directive follows the OECD recommendation forbidding the inclusion of CFC losses. However, it is allowed to carry such losses forward. The Polish CFC legislation is more restrictive, since it excludes the application of loss carryforward.

Regarding the extent to which CFC income should be attributable to the shareholder, the OECD proposes referring to both the proportion of ownership and its actual period. In accordance with Art. 8 § 3 of the ATAD, included income should be calculated in proportion to the taxpayer´s participation. Similarly, the Polish CFC rules refer to profit shares and the duration of the qualifying holding for the purposes of income attribution. However, it should be recognised that disregarding the real level of shareholding – especially for the black list countries – the profit share of 100% over the whole year will be assumed.

6. Prevention and elimination of double taxation

The elimination of the incentive to apply tax planning by means of the inclusion of CFC income can lead to double taxation, since this income is taxed abroad at the level of the CFC and after that upon distribution.

This issue can be illustrated by means of a two-period model. In the first and second period, a profit of 1 and 0, respectively, is yielded. If the profit is shifted to a CFC, in the second period the CFC distributes a dividend to the parent company. Regardless of time effects, the tax burden without the CFC is τ_A (tax rate in the parent's jurisdiction). If the CFC exists and the CFC rules in the first period apply, the tax burden is:

$$\tau_B + \tau_A + (1 - \tau_B) \times \tau^D \quad (8)$$

where (conforming to the previous formulas):

τ_A – tax rate in the country of the shareholder,

τ_B – tax rate in the country of the CFC,

τ^D – tax rate on the dividend.

In order to achieve the level of taxation in the parent company's jurisdiction, the additional tax burden of $\tau_B + (1 - \tau_B) \times \tau^D$ should be eliminated. It can be realised by applying the tax credit method (in the first period) and the exemption of distributed profit (in the second period). Since the CFC legislation not only refers to direct but also indirect ownership, double taxation may also arise if the same CFC income is captured by more than one country. In this case, the tax credit would be the appropriate method to mitigate this drawback.

Consequently, the OECD proposes a credit for foreign taxes borne by the CFC and the exemption for dividends and gains from the sale of CFC shares if the income has previously been subject to CFC taxation [OECD 2015: 65]. According to Art. 8 § 7 of the ATAD, the tax liability of the parent should be reduced by the tax paid by the CFC (tax credit method), which complies with the BEPS proposal. However, the ATAD does not grant an exemption for dividends from the CFC and gains from disposition of the CFC shares. Double taxation in this case should be eliminated by deducting the previously-included CFC income from the tax base in the parent's jurisdiction. In my opinion, this approach should not be interpreted as an inconsistence between the ATAD and the OECD's proposal. Rather, the EU directive emphasises that the deduction applies if distributed profits are subject to tax in the parent's jurisdiction. By an *argumentum e contrario*, dividend income may be exempt according to the tax law of the shareholder's country, although this is not aimed to be enforced by the ATAD. It is noteworthy that a general CIT exemption for (foreign) dividends may boost the incentive to shift passive income abroad [Ruf & Weichenrieder 2012].

The Polish rules on the prevention of double taxation are not very clear. Included CFC income should be lowered by deducting dividends and capital gains from CFC shares. This contradicts the timing of profit distribution after its realisation. If the aim of this provision is to include only non-distributed CFC income, then it should be formulated more clearly and in a similar way like under the ATAD. However, the Polish rule extends this deduction for five consecutive years, which underpins this reversed and thereby distorted order of profit generation and distribution. Assuming that the CFC reinvests its income and after many years, the shareholder disposes of CFC shares, unreduced retained CFC income is taxable on the annual basis in Poland, except for the last year of disposition, when capital gain may be deducted. However, due to profit retention, capital gain exceeds CFC income in the year of the share deal and thus double taxation cannot be entirely eliminated. Moreover, the deduction of capital gain in the last period reduces the Polish CIT and therefore limits the scope for the foreign tax credit. This sets the incentive to optimise the distribution policy along the following formula:

$$(1 - D) \times \tau_A - \tau_B = 0 \tag{9}$$

where (conforming to the previous formulas):

τ_A – tax rate in the country of the shareholder,
τ_B – tax rate in the country of the CFC,
D – dividend from the CFC to the shareholder.

The calculated dividend of $\frac{\tau_A - \tau_B}{\tau_A}$ is equal to an annual distribution of approximately 47.4% of CFC income for the domestic and foreign tax rate of 19% and 10%, respectively. Interestingly, this dividend could be paid back to the CFC in the form of equity increase for investment activity of the CFC.

Apart from the above-described deduction and the tax credit, the Polish CFC legislation also deals with double taxation due to the multiple inclusion of the same CFC income in the case of indirect ownership. This shortcoming is mitigated by reducing taxable CFC income to the extent to which this income is included at the level of another controlled company according to the CFC legislation.

Conclusion

The incentive to use a CFC as a vehicle for tax planning results from a lower level of taxation in the jurisdiction where the CFC is based, and the opportunity for tax deferral, which arises if foreign income is retained at the level of the CFC.

Even if the Polish CIT is relatively low in comparison with other OECD countries, the risk of tax avoidance by Polish taxpayers by means of CFCs remains as

long as some countries are engaged in (harmful) tax competition by providing low tax rates that apply in general or to selected income sources.

Furthermore, the EU directive (ATAD) obligates EU Member States to implement – among others – the CFC legislation, which complies with the outcomes of the BEPS project.

Nevertheless, the analysis of the “hastily” introduced CFC rules in Poland reveals some significant shortcomings. Essentially, the Polish provisions are stricter than the minimum standard set by the ATAD, although some features of the Polish CFC legislation, like the non-inclusion of shares owned by associated enterprises or the thresholds of 50% and 10% for the exemption of CFC income do not meet the requirements of the ATAD. Moreover, the benchmark for low tax should refer to the effective tax burden rather than the statutory tax rate [OECD 2015: 37]. The recent tax law amendments eliminate the aforementioned non-conformities with the ATAD and thus must be viewed positively.

Concerning profit repatriation, the approach to the elimination of double taxation is still unclear. Arguing that the CFC legislation should lead to a tax burden that would be levied without the CFC, the distribution of the previously-included CFC income should be exempt from taxation in the parent’s jurisdiction, as proposed by the OECD. Instead, if distributed CFC profit should be subject to tax, this dividend should be reduced by deducting CFC income that has already been taxed at the level of the shareholder, as proposed by the ATAD. However, the reversed order of the Polish CFC legislation – according to which the dividend should be deducted from included CFC income – is distorted.

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Optymalizacja podatkowa oraz regulacje w zakresie CFC z perspektywy Polski

Streszczenie. *Zgodnie z dyrektywą unijną w sprawie unikania opodatkowania (ATAD, 2016/1164) państwa członkowskie Unii Europejskiej (UE) muszą wdrożyć m.in. przepisy dotyczące kontrolowanych spółek zagranicznych (CFC), które stanowią narzędzie optymalizacji podatkowej. Dyrektywa ta jest wynikiem zaleceń opublikowanych w 2015 r. przez Organizację Współpracy Gospodarczej i Rozwoju (OECD) w ramach projektu dotyczącego erozji podstawy opodatkowania i przerzucania zysków (BEPS). Na tle pośpiesznie wprowadzonych w Polsce regulacji CFC niniejszy artykuł analizuje korzyści wynikające z optymalizacji podatkowej, porównując obciążenia podatkowe przed i po wykorzystaniu CFC jako instrumentu planowania podatkowego. Pomimo stosunkowo niskiej polskiej stawki podatku dochodowego od osób prawnych (CIT) w odniesieniu do krajów OECD ryzyko fiskalne związane z planowaniem podatkowym wynika z bardzo niskiego poziomu opodatkowania w niektórych jurysdykcjach (nienależących do OECD) oraz z możliwości odroczenia opodatkowania. Polskie przepisy CFC są częściowo niezgodne z rekomendacjami OECD oraz wymogami ATAD. Progi określające zakres stosowania regulacji CFC oraz brak uwzględnienia udziałów posiadanych przez przedsiębiorstwa powiązane nie spełniają unijnych wymogów. Ponad-*

to definicja niskiege opodatkowania odnosi się do nominalnych stawek podatkowych, nie zaś do faktycznej kwoty zapłaconego podatku. Mankamenty te zostały wyeliminowane w ramach ostatnich zmian. Sposób zapobiegania podwójnemu opodatkowaniu w przypadku repatriacji zysków pozostał natomiast niejasny.

Słowa kluczowe: *ATAD, BEPS, CFC, podatek dochodowy od osób prawnych, Polska, optymalizacja podatkowa, planowanie podatkowe, stawka podatkowa*

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Fulfilment of the Neutrality Principle and the Fiscal Function of the Tax on Goods and Services – Selected Issues

Abstract. *It follows from the analysis that there is some tension between the implementation of the principle of neutrality and the fiscal function of the tax on goods and services, which is as a kind of value added tax. It is true that our legislation should follow the EU law. Nevertheless, in some areas a Member State is free to form its own tax system. With regard to this freedom, as is clear from the analysis, decisions about changes in goods and services tax have been mainly guided by its fiscal function. Of course, the need to ensure budget revenue at a certain level will always be a priority for every state authority. However, the realization of the fiscal function of goods and services tax should always be confronted with the need to comply with one of its fundamental features, i.e. the principle of neutrality. This means that the degree to which the principle of neutrality is respected in the construction of goods and services tax has a significant impact on the fulfillment of its fiscal function.*

Keywords: *neutrality principle, fiscal function, tax on goods and services, value added tax*

Introduction

At the current stage of development every state has to obtain funds to accomplish specific public tasks. Taxes are the main instrument that serves this purpose. The fundamental function of a tax in a properly functioning public finance system is the fiscal function [Wojtyna 2000; Famulska 2007: 116 ff.; Kosikowski & Ruśkowski 2008: 465 ff.; Wójtowicz 2008: 144-145; Owsiak 2013: 173]. This function must therefore be regarded as principal and necessary for accomplishing other functions attributed to taxes [Sokołowski 1995: 23-26; Famulska 2007:

116-118; Kosikowski & Ruśkowski 2008: 470-472; Wójtowicz 2008: 144-145; Mastalski 2012: 30-37]. The usefulness of tax as a fiscal instrument – to guarantee an adequate level of tax receipts – results mainly from its features as a mandatory contribution, the payment of which may be enforced, as a last resort, using coercive measures [Harasimowicz 1988: 112; Gaudemet 1990: 352-361; Gajl 1992: 218-224; Kosikowski & Ruśkowski 2008: 465; Nykiel 2010: 27-37; Nowak-Far 2011: 373-377].

Among existing forms of taxation, indirect taxes are one the most efficient tools of satisfying the state's demand for money. One commonly used kind of indirect tax is the value added tax, which is known in Poland as the tax on goods and services (TGS). Because of the way it is calculated [James 2015: 25 ff.], VAT is relatively cheaper than other tax instruments used by the state. This feature of VAT stems directly from the in-built self-control mechanism. On the one hand, the self-control results from the conflict of interest between the entity performing an transaction subject to taxation and the beneficiary of this transaction – assuming that neither party intends to violate the regulations; on the other hand, the self-control is associated with the procedure of documenting transactions made. In addition, the obligation of calculating the amount of due tax is the responsibility of the taxpayer.

These characteristics of VAT do automatically guarantee its optimal efficiency. VAT's fiscal efficiency is affected by many factors, some of which are external [Hybka 2011: 6; Ebrill et al. 2001: 51-61; Aizenman & Jinjarak 2006] (e.g. macroeconomic variables), while others result from the form of the tax and the way it is implemented [van Brederode 2009: 49] (above all tax neutrality) as well as the fact that tax authorities can easily check if the VAT on particular transactions has been correctly calculated.

The purpose of this article is to analyse the relationship between the fulfilment of the neutrality principle and the fiscal function of the tax on goods and services. Consequently, the first part of the study is devoted to the analysis of macroeconomic data in order to assess the fiscal significance of the tax on goods and services for the public finance in Poland. The next part is an attempt to identify the fiscal effect of maintaining legal solutions that reduce the neutrality of the TGS. The last part deals with directions of changes in the implementation of the TGS that contribute to the fulfilment of the neutrality principle.

1. Fiscal significance of the tax on goods and services for the public finance

Taxes are the basic source of revenue for the state budget and tax rates largely determine to what extent the state is capable of accomplishing its basic functions.

The role of the VAT (TGS) as a tool of acquiring tax revenues can be evaluated on the basis of an indicator which expresses the relation between VAT receipts and the gross domestic product (GDP) [Hybka 2011: 207-217]. Table 1 presents detailed data in this regard.

Table 1. Share of revenues from Tax on goods and services in GDP in the period 2004-2015

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Share in %	7.1	7.7	8.1	8.2	8.0	7.3	7.6	7.9	7.2	7.0	7.1	7.0

Source: based on Eurostat data, http://ec.europa.eu/eurostat/data/database [access: 15.09.2017].

In the reference period, the share of revenues from the tax on goods and services in the GDP ranged from 7.0% in 2013 and 2015 to 8.2% in 2007. It is notable that despite these fluctuations, in 2015 the ratio was similar to that in the year of Poland's accession to the European Union, in spite of the legal changes regarding the tax, which should have had a positive impact on the amount of tax revenues. These changes included, among others, the expiry of the transition period with a super-reduced tax rate on unprocessed food, an increase in all tax rates by 1 percentage point (or 2 points for food) in 2011, or partial elimination of reduced tax rates on specific groups of goods. This means that between 2004 and 2013, the receipts from the GTS rose in proportion with the growth in GDP.

This ratio should also be examined after adjusting for the so-called VAT gap, i.e. the loss of budget receipts in relation to the GDP, calculated by the European Commission, as a result of the shadow economy and tax fraud. It is clear from the report published by the European Commission in 2013 [European Commission 2013] regarding the period 2000-2011 that the VAT gap was calculated as a difference between a theoretic value added tax liability (on the basis of the applicable regulations) and the state's actual VAT receipts, and was presented in the report as a percentage of the GDP (in the following years, the European Commission changed the method of presenting the VAT gap and stopped making reference to the GDP).

Table 2 contains information on the relation between TGS receipts and the GDP adjusted for the VAT gap. The difference between official and adjusted ratios

Table 2. Share of revenues from TGS in GDP in the period 2004-2011 after adjusting for VAT Gap

Year	2004	2005	2006	2007	2008	2009	2010	2011
Share in %	8.6	8.5	8.5	8.4	8.8	8.6	8.7	9.4

Source: based on Eurostat data, http://ec.europa.eu/eurostat/data/database [access: 15.09.2017] and CASE 2013.

Table 3. Structure of state revenues in Poland in the period 2004-2016 (in %)

Specification	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Total revenues	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
1. Tax revenues	86.75	86.72	88.48	87.32	86.57	78.37	88.91	87.63	86.33	86.57	89.86	89.81	86.80
1.1. Indirect taxes	64.62	64.36	64.47	61.97	60.61	56.52	66.00	64.95	63.25	62.82	65.98	64.77	61.57
– tax on goods and services	39.84	41.95	42.72	40.76	40.14	36.27	43.10	43.53	41.73	40.63	43.82	42.58	40.23
– excise tax	24.29	21.97	21.29	20.74	19.91	19.67	22.25	20.88	21.02	21.73	21.71	21.72	20.89
– tax on gambling	0.49	0.44	0.45	0.47	0.55	0.57	0.65	0.53	0.50	0.47	0.44	0.46	0.45
1.2. Corporate income tax	8.36	8.77	9.78	10.38	10.71	8.81	8.70	8.96	8.74	8.27	8.21	8.93	8.38
1.3. Personal income tax	13.76	13.59	14.23	14.96	15.25	13.04	14.22	13.72	13.84	14.79	15.17	15.58	15.33
1.4. Tonnage tax	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.5. Tax on the extraction of some raw materials	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.69	0.50	0.54	0.41
1.6. Taxes abolished	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.7. Tax on some financial institutions	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.11
2. Non-tax revenues	11.48	11.72	10.15	9.50	7.62	10.01	9.79	11.63	12.92	12.89	9.60	9.58	12.75
2.1. Dividends	1.16	1.76	2.05	1.53	1.31	3.04	1.99	2.21	2.85	2.53	1.49	2.20	0.89
2.2. Payment from National Bank of Poland	2.60	2.32	0.59	1.05	0.00	0.00	1.58	2.23	2.85	1.89	0.00	0.00	2.50
2.3. Custom duties	1.46	0.71	0.70	0.74	0.68	0.59	0.66	0.69	0.69	0.72	0.86	1.01	1.01
2.4. Fees, fines, interest and other non-tax income	5.50	6.26	5.96	5.25	4.65	5.30	4.47	5.64	5.68	6.96	6.40	5.83	7.64
2.5. Contributions of local self-government units	0.77	0.67	0.85	0.79	0.85	0.99	1.09	0.86	0.84	0.79	0.86	0.66	0.71
2.6. Foreign income	0.12	0.23	0.37	0.14	0.12	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3. European Union funds and other non-refundable sources	1.66	1.36	1.00	3.19	5.81	11.62	1.30	0.75	0.76	0.55	0.54	0.61	0.45

Source: based on Ministry of Finance data, http://mf.gov.pl [access: 15.09.2017].

of TGS revenues to GDP ranged from 0.2 percentage point in 2007 to 1.5 percentage points in 2004 and 2011. These data highlight the significance of the TGS as a fiscal tool.

If one analyses data regarding the structure of state budget revenues in Poland for the same reference period 2004-2016 (Table 3), it can be seen that the share of indirect taxes in total budget revenues exceeded 60% (except 2009). This means that this kind of tax constituted the state's main source of revenue. By comparison, the contribution generated by income taxes (including corporate and personal income taxes) is roughly only a third of that obtained from VAT, although income taxes are the second largest source revenue.

The TGS and excise tax are the most important indirect taxes used in Poland, although the contribution of the TGS is considerably bigger. In the period 2004-2016, the share of TGS revenue in the state budget fluctuated between 36% and 43%. The TGS accounts for nearly half of all tax revenue in the state budget and two thirds of indirect tax receipts.

Table 4. Share of revenue from TGS in the state budget revenue in Poland, total tax revenue and indirect tax revenues in 2004-2016

Year	Share of TGS revenue in		
	state budget	tax revenues	indirect taxes
2004	39.84	45.93	61.65
2005	41.95	48.38	65.19
2006	42.72	48.29	66.27
2007	40.76	46.68	65.78
2008	40.14	46.37	66.23
2009	36.27	46.28	64.18
2010	43.1	48.47	65.31
2011	43.53	49.68	67.03
2012	41.73	48.33	65.97
2013	40.63	46.93	64.67
2014	43.82	48.77	66.43
2015	42.62	47.41	65.75
2016	40.23	46.34	65.34

Source: based on Ministry of Finance data, http://mf.gov.pl [access: 15.09.2017].

When one compares the initial and final year of the reference period, i.e. 2004 and 2016, it can be seen that the share of the TGS in total revenues and tax revenues remained at a similar level, while its share in indirect tax revenues increased by about 4 percentage points. This indicates that the role of the TGS as a component of the state's tax policy is slowly becoming stronger. In view of the importance of the GTS for the budget, the state naturally focuses its attention on ensuring higher

efficiency of tax collection. On the other hand, however, it undoubtedly makes the state sensitive to any activities or changes in the economy that could contribute to a reduction of TGS receipts.

It is clear from the analysis presented above that the tax on goods and services plays the key role in satisfying the state's demand for money. Empirical data confirm that the present form of the TGS makes it a very good fiscal tool. It does not mean that the current implementation of the TGS (or, more generally, value added tax) should not be modified to respond to the current challenges facing each European economy, including that of Poland. Indeed, the VAT system, including the tax on goods and services, should be changed as quickly as possible in order to significantly reduce the aforementioned VAT gap.

2. The relationship between the fulfilment of the neutrality principle and the fiscal function of the tax on goods and services

The following part is dedicated to the examination of how the limitation of the neutrality of the TGS (i.e. limitation of the right to adjust the amount of output tax by deducting the amount of tax paid on inputs) affects the fulfilment of the fiscal function, especially budget revenues from the GTS. After assessing the impact of the limitation of the right of deduction on budget revenues, its impact will also be analysed with respect to the budget deficit observed in the reference period. If such limitations are eliminated, the budget deficit could increase, assuming that the government spending remains at the same level. By viewing the fiscal effect of the limitation of the right of deduction in the context of the budget deficit, it should be possible to determine the scale of the state's reduced borrowing needs in connection with a lower budget deficit.

The analysis only focuses on the limitation of the right of deduction which applies to purchases of a specific category of motor vehicles[1] (the definition of this category was modified several times in the period following Poland's accession to the EU, as well as the scope of the deduction [Selera 2014: 13-18; Bartosiewicz 2014: 18-25; 2015: 33-38; Martini 2011: 24-28].

Limitations of the right to deduct TGS paid on purchased passenger cars in the reference period can be generally divided into three periods (disregarding the differences in the definition of the motor vehicle, which has changed slightly over the years). The periods are summarised in Table 4. In addition, it is worth noting that from 1 April 2014 onwards, taxpayers can apply deduct VAT paid on cars used

[1] For the purpose of this analysis, the expression "purchases of a specific category of motor vehicles" includes both, the acquisition of the right to use them as owner as well as the right to use them under a lease, tenancy, leasing or another similar agreement.

exclusively for business purposes. According to the information received from the Ministry of Finance in 2014, i.e. in the first year when the amended regulations were in force, 39 379 taxpayers filed declarations to this effect.

Table 5. Limitations of the right of deduction when purchasing passenger cars in the in the period 2004-2017

Period of limitation	Percentage limit	Value limit (PLN)
1.04.2004 – 21.08.2005	50	5 000
22.08.2005 – 31.03.2014	60	6 000
1.04.2014 – today	50	none

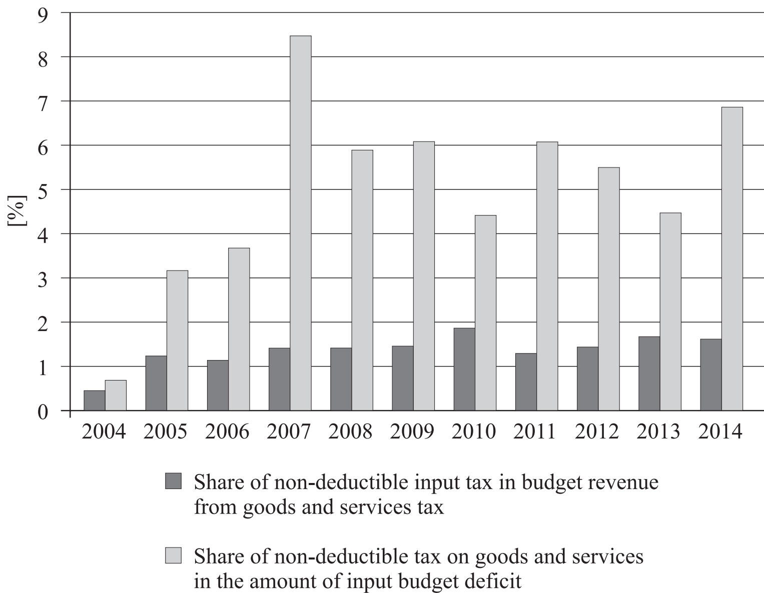
Source: based on the Law on the tax on goods and services.

In order to assess how budget revenues are affected by the limited right to deduct VAT when purchasing passenger cars, it is necessary to calculate the amount of revenue obtained by the introduction of the limitation. This revenue component is equal to the total amount of input tax not deducted by businesses when purchasing passenger cars. The amount was calculated on the basis of average prices of passenger cars purchased by taxpayers in the period 2004-2014 and the total number of cars purchased by in this period.

The total fiscal effect of the limitation of the right to deduct input tax is the product of the non-deductible input tax calculated on the basis of the average price of a passenger car purchased by businesses in a given year and the number of cars registered by businesses in the same year. It is clear from the analysis of the available data that between 2004 and 2010, the amount of revenue gained by the state budget kept growing, and in 2010 exceeded PLN 1.9 billion. In the following year, the total amount of non-deductible input tax on goods and services decreased by ca. 22% only to rise again in subsequent years. However, after the introduction of significant changes in the principles of deducting input tax in 2014 (elimination of the limit and introduction of the right to a full deduction if passenger cars are used solely for business purposes), the amount declined again to PLN 1.6 billion. More importantly, between 2004 and 2014 the amount of revenue obtained by the state budget thanks to the limitation increased almost sixfold.

It is clear from the calculation that in the reference period, additional budget revenues from the limited right to deduct input tax when buying passenger cars ranged from 0.43% in 2004 and 1.83% in 2010 of all TGS revenues (calculations shown in Chart 1). In the whole period, the average share of additional revenue (the amount of non-deductible tax) in all TGS revenues was equal to 1.31%. The relatively low share in the first year of the reference period is mainly due to the fact that the data regarding, for example, the number of cars, only cover (proportionally) the period after Poland's accession to the EU. Nevertheless, the impact

Chart 1. Comparison of shares (in percentage) of non-deductible tax on goods and services on the purchase of passenger cars in the budget revenue for this tax and the budget deficit for 2004-2014



Source: based on data provided by the Samar Automotive Market Research Institute (unpublished information) and information from http://mf.gov.pl [access: 15.09.2017]..

of the limitation should be considered significant. It applies to only one group of goods (i.e. passenger cars), and in the extreme case (i.e. in 2010), non-deductible input tax accounted for almost 2% of all TGS revenues in the budget.

In order to get a more complete picture, the gain resulting from the introduction of the limitation can be also compared with the budget deficit observed during the reference period. This comparison will help to answer the question of how much less the state needed to borrow in the reference period because of the existence of the limitations (which ensured higher budget revenues from the TGS). According to the data, the share of non-deductible input tax on goods and services in the budget deficit ranged from 0.65% in 2004 to 8.52% in 2007, with an average of ca. 5% during the whole period analysed. This means, in simple terms, that the deficit would have been higher by this amount if the deduction right had not been limited and if the full neutrality of the tax on goods and services had been retained. Given that the analysis concerns one group of goods, like in the comparison with the budget receipts, the limitation of the deduction right has a significant impact on the fiscal function of the tax on goods and services.

Identical conclusions can be drawn from the analysis of data regarding other limitations of the right of deduction concerning:

– motor fuels, diesel oil and gas, used to power motor vehicles which were subject to the limitation of the deduction right;

– accommodation and restaurant services;

– services provided by companies based in countries or territories engaged in harmful tax competition – the limitation was repealed in 2011.

Similarly, when one analyses refund periods of the surplus of input tax over output tax, which are a way of ensuring the tax neutrality of the TGS system, it is clear that they are also an important determinant of the fiscal significance and neutrality of this tax. The longer the refund periods are, the more the state budget gains from using the tax money paid by the purchaser, which has, in fact, already been paid by another taxpayer (supplier). In this way, the state budget takes advantage of a free "loan" without having to pay any interest (unless the refund deadline is exceeded). On the other hand, sufficiently long refund periods enable the state to verify the validity of the refund.

3. Potential directions of changes regarding the tax on goods and services to increase the extent to which the neutrality principle is fulfilled

When planning potential directions of changes to increase the neutrality of the tax on goods and services, both components mentioned above should be considered. In other words, possible space for changes is created by the current limitations of the right to deduct input tax and the principles of refunding the surplus of input tax over output tax. As regards the former area, efforts to increase tax neutrality should focus on limiting the deduction right when purchasing accommodation and catering services, and a specific category of motor vehicles including expenses related to their use. As regards conditions of refunds, the refund periods are the basic component ensuring tax neutrality, i.e. the period between the time of filing a tax reclaim and the lapse of the refund period that the tax authorities are entitled to.

From the perspective of the legitimacy of maintaining a full limitation of the deduction right for the first of the aforementioned categories of expenses, the case of accommodation services is the most questionable. It makes sense to introduce limitations of the deduction right if:

– an expense by its very nature is private and does not show any connection with the business activity or the connection is limited and therefore leads to final consumption;

– an expense is of a dual nature, i.e. it may be made for private purposes and for business purposes, but there are no easy control mechanisms on the part of tax

authorities to verify the legitimacy of the input tax deduction or taxation of final consumption.

Accommodation services can certainly be used in the course of business activity, e.g. during business trips. On the other hand, a significant portion of this type of services is undoubtedly used to meet peoples' individual needs related to non-business trips, i.e. private trips. However, these services, in terms of ease and efficiency of ensuring correct settlements, i.e. ensuring taxation of final consumption, do not seem to differ from purchases of passenger cars or other expenses related to such cars. In this case, from the beginning of Poland's EU membership, the legislator has permitted to deduct input tax, at least partially. Under the current regulations, it is even permitted to fully deduct input tax from output tax provided that a vehicle is used solely for business purposes and the taxpayer keeps the relevant records. Therefore, it seems reasonable to adopt analogous solutions to those currently applicable to passenger cars. In practice, the full limitation of the right to deduct input tax on the price of accommodation services purchased would have to be abolished, and a partial or full deduction would have to be introduced. Such legislative amendments would be in line with EU law and would require no consent from the European Commission. It is clear from European Court of Justice case law[2] issued under Art. 17(6) of the Sixth Directive[3] (currently, Art. 176 of Directive 2006/112[4]) that Member States may retain exclusions of the deduction right that applied prior to the state's accession to the EU or before the entry into force of the Directive. However, the state may reduce the scope of the limitation of the right to reduce the output tax by input tax, thus pursuing the tax neutrality principle to a greater or full extent.

In the case of passenger cars and operating expenses, the neutrality level was increased significantly, compared to earlier regulations, by the introduction of the following rights in 2014 and 2015:

– the right to fully deduct input tax on goods and services if the vehicle was purchased or is used solely for business activity, which is eligible for full utilisation of the input tax refund;

– the right to deduct 50% of the input tax on fuel used in passenger cars which are subject to the limitation of the right of deduction (before the change, the taxpayer was not entitled to any deductions).

However, the fundamental component under the current rules which affects the tax neutrality level is the percentage of input tax that can be deduced when

[2] E.g. judgment of the CJEU of 14 June 2001 in case C-345/99 Commission of the European Communities vs French Republic, Reports of Cases 2001, I-04493.

[3] Sixth Council Directive 77/388/EEC of 17 May 1977 on the harmonization of the laws of the Member States relating to turnover taxes – Common system of value added tax: uniform basis of assessment (OJ L 145).

[4] Council Directive 2006/112/EC of 28 November 2006 on the common system of value added tax (OJ L 347).

cars are used for both business and non-business purposes. In accordance with the current regulations, in such cases the taxpayer is entitled to deduct only half of the input tax when purchasing a passenger car and incurring expenses related to its operation. A natural direction extending the scope of the right to deduct input tax would be to increase the deduction percentage to the level that reflects more adequately the degree of the taxpayer's car use for business purposes. This change can be made either by adopting a single higher deduction percentage, based on previous calculations of the degree of car use for business purposes in the general population of registered TGS taxpayers, or by granting taxpayers the freedom to make individual decisions based on their records of car use in a given settlement period (month or quarter).

As regards the current time limits for refunding the surplus of input tax over output tax, it is worth noting that the 60-day refund period (nearly 90% of refunds are made within the basic period) is a significant burden for taxpayers, which limits the neutrality of the tax on goods and services. Therefore, three solutions can be considered:

– eliminate the conditions for 25-day refund period (in particular the condition of payment), while maintaining the current basic 60-day period for the refund of excess input tax; or

– introduce a 25-day refund period as the basic period for the refund of excess input tax (or gradual introduction of this solution); or

– introduce the possibility of using the 25-day refund period for a larger group of entities classified as so-called trustworthy taxpayers (classification criteria for obtaining this status should be connected, in particular, with reliable settlements of obligations).

The introduction of changes described above is a relatively simple legislative procedure, requiring no agreements between Poland and the European Commission. Of course, such a change should be made after safeguarding the interest of the state budget and the fiscal function of the tax on goods and services, which results not only from the reduction of the interest-free "loan" available to it, but primarily from shortening the time necessary to verify the validity of a refund. Such activities are particularly significant at present, when tax reclaims for cross-border transactions within the European Union are a frequent form of tax fraud. It is estimated that annual losses to the state budget resulting from tax fraud amount to nearly 2% of the GDP [European Commission 2015]. For this reason, any action aimed at improving the neutrality of the tax on goods and services by changing the principles of tax refunds should be accompanied by actions aimed at tightening up the system and enabling tax authorities to identifiers taxpayers and transactions that reduce the fiscal efficiency of the tax on goods and services.

Regardless of the complexity of the tax on goods and services system, which is exploited by entrepreneurs committing tax fraud, rules regarding refunds of

excess output tax over due input tax should comply with the neutrality principle. This is particularly true given that other Member States have developed rules that seem to be more favourable for taxpayers.[5] First of all, in some Member States tax refund periods are shorter than the basic refund period in Poland (e.g. Austria, Croatia, Czech Republic, Estonia, Slovenia). However, in some countries, for instance in Scandinavia, and particularly in Germany or the Netherlands, tax refunds are generally made immediately, the refund period being often related to the taxpayer's status and their diligence in fulfilling tax obligations. In many cases, the length of the refund period depends on the duration of business activity. The latter set of criteria would definitely need to be considered, since it should help to increase the neutrality of the TGS.

Conclusion

It is clear from the analysis presented above that the tax on goods and services is a crucial source of revenue for the state budget. Empirical data confirm that this kind of tax is a very good fiscal tool.

Therefore, the basic factor to consider in the process of designing the TGS system, especially as regards tax neutrality, is the contribution of the TGS to budget revenues. After Poland's accession to the European Union, the legislator often increased the scope of neutrality but only to the extent required to ensure compliance of the Polish regulations with EU laws or if those changes were neutral for the state budget.

It must be admitted that the current regulations concerning the fulfilment of the neutrality principle regarding both aspects, i.e. the right to deduct input tax from output tax and the right to claim a refund of excess input tax (including the right to make a refund to non-residents) are largely similar to the principles set out in EU laws, specifically Directive 2006/112 and resulting case law of the European Court of Justice. What does arouse considerable doubts, however, is the limitation of the deduction for accommodation services. In the case of such services, specifically those acquired solely in connection with business activity, the taxpayer should be entitled to deduct input VAT.

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[5] http://online.ibfd.org/kbase/#topic=d&N=3+10&ownSubscription=false&Nu=global_rollup_key&Np=1 [access: 19.12.2016].

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Realizacja zasady neutralności a funkcja fiskalna podatku od towarów i usług – wybrane zagadnienia

Streszczenie. *Z przeprowadzonych rozważań wynika, że istnieje napięcie między realizacją zasady neutralności a funkcją fiskalną podatku od towarów i usług. Oczywiście w zakresie przestrzegania tej zasady ustawodawca jest związany prawem unijnych. Niemniej w niektórych obszarach prawo to pozostawia państwu członkowskiemu swobodę kształtowania własnego systemu podatkowego. W zakresie tej swobody, jak wynika z dokonanej analizy, podstawowym kryterium przy podejmowaniu decyzji dotyczących kierunków zmian w zakresie podatku od towarów i usług była funkcja fiskalna podatku. Oczywiście konieczność zapewnienia dochodów budżetowych na określonym poziomie jest priorytetem dla każdej władzy państwowej. Jednak realizacja funkcji fiskalnej podatku od towarów i usług powinna zawsze być konfrontowana z koniecznością realizacji jednej z fundamentalnych cech tego podatku, tj. zasadą neutralności. Potwierdza to, że zakres respektowania zasady neutralności w konstrukcji podatku od towarów i usług ma istotne znaczenie dla realizacji funkcji fiskalnej tego podatku.*

Słowa kluczowe: *realizacja zasady neutralności, funkcja fiskalna, podatek od towarów i usług, ograniczenia prawa do odliczenia*

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Description and Application of Fiscal Rules as Instruments of Ensuring the Sustainability of Public Finances in Poland

Abstract. *The purpose of this article is to describe and evaluate fiscal rules aimed at maintaining the sustainability of public finances in Poland. Fiscal stability is defined as the government's ability to regulate its obligations. In the following section the author systematizes fiscal rules and provides their brief characterization. These rules constitute permanent budgetary constraints, which are reflected by the budgetary indicators that are used to monitor the implementation of this policy. The final part of the article is devoted to the analysis of the sustainability of public finances in Poland in the years 2007-2016, with particular emphasis on the fiscal rules. The author answers the question whether fiscal policy in the reference period was characterized by stability.*

Keywords: *public finance, fiscal stability, fiscal rules, budget policy*

Introduction

Fiscal policy is currently playing an extremely important role in all types of operations in the public finance sector. It deals with the development of state revenue and expenditure and processes of managing public funds. It is one of the fundamental forms of stimulating economic development and it is an important instrument for correcting the market mechanism. There is no doubt that a responsible fiscal policy aimed at maintaining stability in the public finance sector requires the establishment of and compliance with strict standards and rules.

The purpose of this paper is to present the fiscal rules that are currently in force in Poland and to describe the role they play in preserving the sustainability of public finances. The main idea of fiscal stability is presented based on the literature on economics and finance. Given widespread budget deficits and growing public debt, it is extremely important to have a proper understanding of this concept. The second part of the article contains a systematic description of the existing fiscal rules, taking into account various classification criteria and their concise characteristics. Each fiscal rule is a permanent limitation of political discretion in fiscal policy and is reflected by the budgetary indicators used to monitor its implementation. The final part of this paper is devoted to the analysis of the sustainability of public finances in Poland in the years 2007-2016. The author's attention focuses on the impact of the current fiscal rules on the condition of the public finance sector in order to evaluate the stability of fiscal policy in Poland in the reference period.

1. The main idea of fiscal stability

In the literature on economics and finance, there are numerous approaches to fiscal sustainability. Despite the growing interest in the concept, one cannot fail to note a certain degree of ambiguity in the definition of this term. No consistent and accepted definition of fiscal sustainability has been formulated to date. For this reason, only selected formulations will be cited, which refer to the main idea of the concept.

According to one definition, fiscal sustainability is understood as a feature of fiscal policy that enables the government of a country to regulate its obligations in a timely manner without making important adjustments in the balance of public revenue and expenditure [Jajko 2008: 43]. The above formulation highlights the concept of solvency and essentially refers to the state's ability to fulfil its obligations, while respecting all agreements and deadlines involved.

Fiscal stability is also defined as the ability of the public finance sector to continue its existing policies without undermining the budgetary constraints of the sector [Mackiewicz 2010: 88]. It is important to pay special attention to the condition that must be met in order to respect the interim budgetary constraints of the public finance sector. The condition is met when public debt in the initial period is equal to the discounted debt in the final period and the sum of the discounted differences between the projected public revenue and the expected public expenditure [Pączek-Jarmulska 2016: 49]. The above-mentioned differences between public revenue and public expenditure are respectively the budget surplus (in the case of a positive difference) or the budget deficit (in the case of a negative difference).

While discussing the essence of fiscal sustainability, one cannot forget about the problem of public debt, which is emphasized in the next definition. According to this view, fiscal sustainability is preserved by maintaining the level of public debt within reasonable limits, i.e. such that minimize negative consequences of budget deficits and debt and enable the state to effectively achieve its tasks aimed at stabilizing the economy [Włodarczyk 2013: 314]. The permissible level of debt is determined by functioning prudential thresholds. When the level of public debt exceeds 55% of GDP and 60% of GDP, the government is required to take a strict action to reduce the level of debt.

There is no shortage of practical approaches to defining fiscal stability. According to J. Blanchard, a stable fiscal policy occurs when the ratio of public debt to GDP strives to reach the baseline level. Stability is preserved when real debt in real terms does not increase faster than the interest rate, and the ratio of public debt to GDP should not rise more than the difference between the rate of growth and the interest rate [Blanchard 1990: 13]. In view of this, stable fiscal policy allows expansionary fiscal policy during periods of recession, bearing in mind the need for stabilization or, if possible, limiting the ratio of public debt to GDP after a period of increased budget expenditure.

2. Classification and characterization of fiscal rules

Fiscal stability discussed above is closely related to fiscal rules. They are an essential element contributing to the quality of public finance, which can be seen in the dimensions of the scope of public finances, the scale of budget imbalances and the structure of public revenue and expenditure and their effectiveness. Fiscal rules are factors which support the process of ensuring the quality of public finances, apart from institutional and operational solutions [Franek 2010: 66].

Fiscal rules can be defined as a type of permanent restriction of political discretion in fiscal policy, which is expressed by numerical limits imposed on fiscal aggregates [Kopits & Symansky 1998: 2]. They are seen as promising tools in the fight against the public finance crisis in individual states. The main impetus for the implementation of fiscal rules for public finance systems has been the tendency of governments to face a widening budget deficit, which in turn leads to a steady increase in public debt and budgetary expenditures related to the servicing and repayment of debt [Spychała 2015: 228].

There are many reasons for introducing fiscal rules into the public finance system. One of them is to guarantee macroeconomic stability in the economy. Fiscal rules also designed to preserve the shape of fiscal policy in the long run. They are meant to reduce negative externalities of autonomous fiscal policies adopted by the countries of the European Union. Undoubtedly, the most important reason for

the implementation of fiscal rules is the improved credibility of fiscal policy and a reduced risk of excessive government deficits [Działo 2012: 220].

In the European Union, there is a two-tier mechanism for the functioning of fiscal rules – the national and the EU level. The task of the EU level is to effectively discredit the fiscal policies of the Member States. This is because fiscal policy is shaped by individual Member States. Accordingly, each country's budget is based on the country's regulations. There are certain differences between individual country regulations but they part of a general framework agreement and comply with international treaties and agreements, i.e. the Maastricht Treaty and the Stability and Growth Pact [Próchnicki 2012: 30].

After presenting the main idea and importance of fiscal rules, it is necessary to systematize them, taking into account different classification criteria. In the literature, fiscal rules are often classified with respect to budget indexes. According to this approach, four types of fiscal rules are distinguished:

- budget balance rules,
- public debt rules,
- revenue rules,
- expenditure rules.

Budget balance rules can refer to the actual balance, i.e. the difference between revenue and expenditure in a financial year, a structural balance – a hypothetical figure arising under conditions of full utilization of the manufacturing capacity of the economy and the rate of unemployment corresponding to full employment or to a cyclical balance, which takes into account the impact of the business cycle on the level of budget revenue and expenditure [Wójtowicz 2011: 139]. Two specific rules are worth mentioning at this point: the balanced budget rule and the golden budget rule. The first one is the clearest and is considered to be the most rational rule, although numerous analyses suggest that it has procyclical effects (not anticipating changes in the business cycle). It should be noted that the above rule may not apply continuously. On the other hand, the main idea of the golden rule is to balance the current budget. As a result, the government is allowed to increase budget expenditure to finance investments; current revenue can only be used to cover public current expenditure, while capital expenditure can be covered by debt. At present, the budget balance rules usually cover the limit of the acceptable level of deficit in relation to GDP [Marchewka-Bartkowiak 2012: 49-50].

Public debt rules are quite uniform and in principle are not subject to significant modifications. They involve imposing a limit on the level of public debt in the form of debt to GDP ratio [Działo 2012: 222]. The most common debt rule is contained in the Treaty of Maastricht. According to this rule, the public debt of EU Member States must not exceed 60% of GDP. It should be noted that an analogous rule is included in the Polish Constitution, which stipulates that the ratio of public debt to GDP must not exceed 3/5 of GDP. The debt rules generally take

into account the gross debt of the sector as a whole, but they can also refer to the debt of individual segments, i.e. government debt, local government or insurance [Wójtowicz 2011: 140].

Revenue rules are introduced to achieve three main objectives. The first is the implementation of the goal of maintaining stable taxes and minimizing drastic actions in this area (primarily tax increases). Another goal is to determine the allocation norms for a revenue surplus that has been achieved in the current year. It should be noted that the available funds should be used to repay the existing debt. The last goal of revenue rules is to specify what percentage of the budget revenue is to be transferred to state stabilization funds [Marchewka-Bartkowiak 2012: 51].

Expenditure rules, the last category in the above classification, can take on various forms because there are various categories of public expenditure. Most of these rules refer to aggregate expenditure. The most common spending limit is expressed in the form of spending growth rules. The idea of the limit is that government spending should grow at a fixed rate, regardless of changes on the revenue side of the budget. Expenditure rules can also apply to separate categories of expenditure. Generally, they take the form of multi-year limits imposed on individual categories of expenditure [Działo 2012: 222].

As already mentioned, the EU utilizes a two-way mechanism for the implementation of fiscal rules. Therefore, depending on their territorial coverage, fiscal rules can be classified into the **transnational rules** (the budget criteria contained in the Treaty of Maastricht, subsequently extended in the Stability and Growth Pact) and the **national rules** contained in national legislation.

Another classification takes into account the specific type of institutional arrangements, which can be divided into **quantitative rules** (also called numerical rules), expressed as quantified limits for certain budget categories, and **qualitative rules** (also referred to as procedural rules), which refer to official guidelines for the construction and implementation of the budgetary law and to solutions that ensure their transparency [Wójtowicz 2011: 138].

The last extremely important classification criterion for fiscal rules is their application scope: namely, some rules apply to the whole public sector, while others only refer to the government and local government sector (regional and local). There are also fiscal rules for social security [Marchewka-Bartkowiak 2012: 49].

3. Analysis of the sustainability of public finances in the light of fiscal rules in the period 2007-2016

The main fiscal rule that governs fiscal policy in Poland is the **rule of public debt**. As mentioned earlier, it is included in the Constitution of the Republic of Poland and defines the acceptable limit of public debt. Specifically, it is prohi-

bited for the government to borrow or grant financial guarantees that will cause public debt to exceed 3/5 of the value of annual GDP. The above provision is complemented by regulations set out in the Public Finance Act, which includes precautionary and sanctioning procedures to be followed when public debt levels exceed 55% and 60% of GDP, respectively. It is important to briefly discuss the sanctions and restrictions that are imposed when individual prudential thresholds are exceeded.

Prudential procedures are triggered when **the debt to GDP ratio is greater than 55% and less than 60%**. In this situation, the level of budget deficit in the draft budget for the next year is reduced so that the ratio of Treasury debt to GDP projected at the end of the budget year should be lower than in the current year. In addition, the Council of Ministers reviews budget expenditures, which are financed by foreign loans and the review of multiannual programs. The Council is also obliged to submit a sanitation program to the Parliament, which aims to reduce the debt to GDP ratio. There are also restrictions on the financial management of local governments. The expenditures of the local government specified in the budget resolution for the following year can exceed the revenues, plus surplus and free funds only by the amount related to the implementation of strictly defined statutory tasks.[1]

The strictest restrictions apply when **the public debt to GDP ratio is equal to or greater than 60%**. Then in the draft budget law for the next year and in budget resolutions of local governments, the amount of expenditure must be equal or lower than the amount of expected revenue. The Council of Ministers is obliged to present to the Parliament a sanitation program aimed at reducing the debt to GDP ratio to less than 60%. It is also prohibited to issue new sureties and guarantees by units of the public finance sector.[2]

It should also be mentioned here that by 2013 there was another (lowest) prudential threshold – the ratio of public debt to GDP higher than 50% but not exceeding 55%. In this case, the ratio of the budget deficit to the budget revenue for the following year must not exceed the corresponding ratio for the current year. The first prudential threshold was waived under the Law on the Amendment of the Public Finance Act and some other statutes.[3]

Strictly linked to the rule of public debt is the **rule of the budget balance**. In Poland this rule is implemented as the **budget deficit limit**. The main idea of budget deficit limits is that in a given period (usually fiscal year) the deficit cannot

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[1] Public Finance Act, Journal of Laws no. 157, item 1240 as amended (ustawa z dnia 27 sierpnia 2009 r. o finansach publicznych, Dz.U. nr 157, poz. 1240 z późn. zm.).

[2] Ibidem.

[3] Law on the Amendment of the Public Finance Act and some other statutes, Journal of Laws item 1646 (ustawa z dnia 8 listopada 2013 r. o zmianie ustawy o finansach publicznych oraz niektórych innych ustaw, Dz.U. poz. 1646).

exceed a specified limit, expressed as a percentage of GDP. In line with the Maastricht Treaty, budget deficits in member states **should not exceed 3% of GDP** [Działo 2012: 221].

In order to assess the effectiveness of the above-mentioned fiscal rules, the development of the budget deficit and public debt should be analyzed in the reference period. Table 1 presents the budget deficit in relation to GDP and public debt in relation to GDP in the period 2007-2016.

Table 1. Budget deficit and public debt (% of GDP) in 2007-2016

Year	Budget deficit	Public debt
2007	1.9	44.2
2008	3.6	46.3
2009	7.3	49.4
2010	7.3	53.1
2011	4.8	54.1
2012	3.7	53.7
2013	4.1	55.7
2014	3.5	50.2
2015	2.6	51.1
2016	2.4	54.4

Source: based on data from *Raport roczny. Dług publiczny* 2017: 87, 91.

One particularly noteworthy fact about the data shown in the table above is the substantial increase in the budget deficit in 2009. This was due to the major economic downturn at that time. In the same year, Poland was included in the excessive deficit procedure. In practice, this meant that Poland was obliged to comply with certain recommendations made by the Council of the European Union. In 2015 the Council decided to close the excessive deficit procedure for Poland because the budget deficit had been reduced to less than 3% of GDP.[4]

In recent years, public debt in Poland has been on an upward trend. The only exception is 2014, when public debt fell (by 9% of GDP)[5] due to the transfer of some of the assets from Open Pension Funds to the Social Insurance Institution.

Existing fiscal rules designed to control the budget balance and public debt undoubtedly have a very significant impact on the sustainability of public finances in Poland. The obligation to comply with these rules, which are stipulated both in international and national laws, helps to avoid excessive, uncontrolled increases

[4] www.forbes.pl/wiadomosci/rada-ue-zdjela-z-polski-procedure-nadmiernego-deficytu/0szjv7d [access: 1.09.2017].

[5] www.forbes.pl/wiadomosci/polski-dlug-publiczny-spadl-o-9-proc-pkb-dzieki-ofe/cstpn2v [access: 2.09.2017].

in the budget deficit and public debt. In the light of the above analysis, the size of the budget deficit and public debt in the period under review was under control thanks to the application of these fiscal rules.

It is now time to discuss another fiscal rule which is in force in Poland – the expenditure rule. The current **stabilizing expenditure rule** was incorporated into the Polish legal system in early 2014 [Ustawa o zmianie ustawy 2013]. It replaced the disciplinary spending rule, which was implemented only for a temporary period [Budzyński 2016: 21].

The purpose of the stabilizing spending rule is **to set a limit on the general government expenditure** at a level that ensures the sustainability of public finances. It sets a maximum cap for spending across the sector, so expenditures of some entities can grow faster along with a slower increase or decrease in expenditures of other entities subject to this limit. This symmetric correction mechanism has been incorporated into the rule with an operational objective closely linked to the medium-term budgetary objective. The control account cumulates the deviations of the nominal value of the general government from this medium-term budgetary objective. In cases where the level of deviations is disturbed, an additional adjustment of the expenditure limit dynamics is triggered. However, if the situation does not need to be adjusted, spending limits increase at a medium-term GDP plus expected inflation [MF 2013: 1-3].

Estimates of expenditure for 2016 were made in accordance with the binding stabilizing spending rule. Estimates were made taking into account the amount of expenditure for 2015 (PLN 696.7 bn) and forecasted macroeconomic indicators, such as the medium-term GDP growth rate and the projected CPI for 2016. The correction resulted from the update of the inflation estimates for 2014-15, the correction due to the public finance imbalance and the projected value of significant discretionary measures for 2016. As a result, the estimated expenditure for 2016 was 712.8 billion PLN and was 2.31% higher than the amount of expenditure for 2015, which was equivalent to a decrease in the expenditure to GDP ratio by 1 percentage point compared to 2015 [MF 2015: 11].

Taking into account the very short period of the functioning of the stabilizing spending rule, it is extremely difficult to assess its impact on the level of state budget expenditures, as well as the general government sector and the size of the budget deficit. Nevertheless, one can assess reliable forecasts for 2018. With strict adherence to the spending rule, the expenditure to GDP ratio and a medium-term budgetary objective (structural deficit of –1% of GDP) are expected to keep falling in 2018 [MF 2014: 8, 14]. The rule was the motivating factor and a kind of guarantee behind the decision to close the excessive deficit procedure for Poland despite the fact that the sector deficit at the end of 2014 exceeded 3% of GDP [Budzyński 2016: 27].

The last category of fiscal rules that apply in Poland are **revenue rules**. One particular revenue rule is the obligation to transfer some proceeds from privatization to the Demographic Reserve Fund [Działo 2012: 210]. According to the Act on the Social Security System, the Demographic Reserve Fund is financed, among other things, from the privatization of State Treasury assets in the amount of 40% of total gross proceeds from all privatization processes in a given year, less the sum of the obligatory write-offs for obligatory special purpose funds.[6] It should be noted that of all applicable rules described above revenue rules have the least impact on maintaining the sustainability of public finances in Poland.

Conclusion

The objective of this paper was to present and evaluate the existing fiscal rules in Poland. The analysis was based on the most commonly used classification of fiscal rules, which distinguishes between rules designed to control the budget balance, public debt, expenditure and revenue. The analysis focused on the impact of particular fiscal rules on the sustainability of the public finance sector in Poland.

The analysis of the sustainability of public finances in Poland in the period 2007-2016 shows that the fiscal rules fulfill their expected role. The imposition of the excessive deficit procedure in 2009 undoubtedly contributed to a faster reduction of the alarmingly high budget deficit. The procedure was applied as a result of observing the budget balance rule (and more precisely the deficit rule) and the closely related public debt rule. These rules are clear and have a high legal status. Their disadvantage is that they can lead to the implementation of the pro-cyclical fiscal policy (this is the case when the relevant indicators are not corrected for fluctuations in the business cycle).

The condition of the public finance sector is also affected by the stabilizing expenditure rule, which sets a limit on the general government expenditure at a level that ensures the sustainability of public finances. The advantage of this rule is undoubtedly the fact that it limits the discretion of fiscal policy by precisely setting acceptable spending limits. Poland also applies the revenue rule, but its impact on financial stability is by far the smallest.

It can therefore be concluded that the fiscal rules helped to maintain the relative stability of public finances in Poland in the reference period. In addition to playing an extremely important role in maintaining the fiscal discipline of the public finance sector, the fiscal rules have a significant impact on limiting the level of government spending, the budget deficit and public debt.

[6] Act on the Social Security System, the Demographic Reserve Fund, Journal of Laws no. 137, item 887 (ustawa z dnia 13 października 1998 r. o systemie ubezpieczeń społecznych, Dz.U. nr 137, poz. 887).

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Charakterystyka i zastosowanie reguł fiskalnych jako instrumentów utrzymania stabilności finansów publicznych w Polsce

Streszczenie. *Celem artykułu jest charakterystyka i ocena reguł fiskalnych służących utrzymaniu stabilności finansów publicznych w Polsce. Przedstawiono w nim definicyjne ujęcie oraz istotę stabilności fiskalnej, która rozumiana jest jako zdolność rządu do regulowania swoich zobowiązań. Następnie usystematyzowano występujące reguły fiskalne oraz dokonano ich krótkiej charakterystyki. Reguły te stanowią permanentne ograniczenia polityki budżetowej, znajdujące odzwierciedlenia we wskaźnikach budżetowych, wskazujących na postępy tej polityki. W ostatniej części dokonano analizy stabilności finansów publicznych w Polsce w latach 2007-2016, ze szczególnym uwzględnieniem omówionych wcześniej reguł fiskalnych. Tym samym zweryfikowano, czy polityka fiskalna w Polsce cechowała się stabilnością w badanym okresie.*

Słowa kluczowe: *finanse publiczne, stabilność fiskalna, reguły fiskalne, polityka budżetowa*

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Tax Policy of the Commune as an Example of Local Public Policy – Goals, Opportunities, Conditions

Abstract. *Public policy refers to ways in which public authorities deal with public issues. It is connected with the functioning of the state and local government. The author follows the approach proposed by B.G. Peters, who assumes that public policy includes ideas for solving public problems, public actions (realized through specific instruments) and results. The aim of this article is to analyze local public policy pursued by the local government in the field of tax policy. In the first part, characteristics of local public policy are described as objectives of the local government. The author's attention focuses on the basic stages of public policy, its instruments and its link to public problems. The second part is devoted to tax policy, its objectives and determinants. In the third part the author presents effects of the tax policy conducted by communes in the period 2007-2015.*

Keywords: *public policy, tax policy, instruments and effects of tax policy*

Introduction

Tax policy has a strong impact on the economy of the micro-region, i.e. the commune. It consists in determining sources and ways of collecting tax revenues for economic, social and financial needs of a local government unit [Satoła 2013: 425]. Tax revenue is the most important source of income in municipal budgets. For this reason, the local government tries to pursue an optimal form of tax policy that can serve as a tool for solving public problems. In order to develop a specific tax policy, communes use diverse instruments which have specific implications. From the point of view of this article, financial implications are the most signif-

icant as decisions concerning tax policy can reduce the commune's budget revenues (e.g. as a result of reduced tax rates).

Given the goals, possibilities, instruments and effects of tax policy, it is a key element of local public policy implemented by communes. The aim of the article is to analyze tax policy as an example of local public policy implemented by local government. Characteristics of a local public policy will be analysed following B. Guy Peters's approach, which assumes that public policy is a series of actions (or lack of action) that affect citizens' lives. According to Peters, public policy includes ideas for solving public problems, public actions (implemented through specific instruments), and results [Zybała 2013: 42]. The commune's tax policy will be discussed from the perspective of these three elements. The discussion is based on the review of literature and relevant regulations and is followed by an analysis of financial statements of local government units (communes). Based on information from financial statements it was possible to identify financial effects of the conducted fiscal policy (among other things, the estimation of revenue lost as a result of communes exercising the right to control taxes).

1. Local public policy as a goal of local government

Public policy is a particular kind of policy, which refers to deliberate actions of political actors. It is understood as the power over resources, administered by public authorities, and above all, government and local government [Hausner 2007: 43]. The concept of public policy is related to the activity of the state and its organizational structures, which are intended to achieve specific objectives and to perform tasks and exercise powers. According to P.J. Suwaj and R. Szczepanowski, public policy "should be understood as a deliberate and intentional process aimed at achieving general goals in particular areas of public life (education, science, public health, social welfare, environmental protection, etc.) which may result from government policies (at the central or local level), and their purpose is to meet social needs (e.g. in the case of health policy) or, more broadly, the needs and interests of the state, that is social needs (e.g. public security policy)" [Suwaj & Szczepanowski 2009: 305].

The process of implementing public policies consists of a sequence of steps where key actions are taken to deal with specific public problems. The process involves analyzing a given public problem, choosing an optimal solution, solving the problem and evaluating the outcome [Zybała 2015: 30]. Harold. D. Lasswell, the creator of public policy sciences, distinguished seven stages:

1. Collect information about the problem, reproduce, disseminate it.
2. Promote (recommend) the general line of public policy.

3. Create the recipe for action, crystallize the general line of policy, generate sustained expectations in a given community.

4. Invoke activities and value goals that create appropriate conditions of action.

5. Apply the recipe according to existing conditions.

6. Complete the action according to the prescription.

7. Evaluate the action (including ways in which it was carried out) that led to the implementation of public policy and the assignment of responsibility [Zybała 2015: 30].

New approaches to public policy viewed as a process are presented in the context of practical problem solving and the distinction between two cycles of design and implementation [Szarferberg 2016: 51]. Figure 1 illustrates the relationship between a model for solving social problems and a model for creating and implementing public policy.

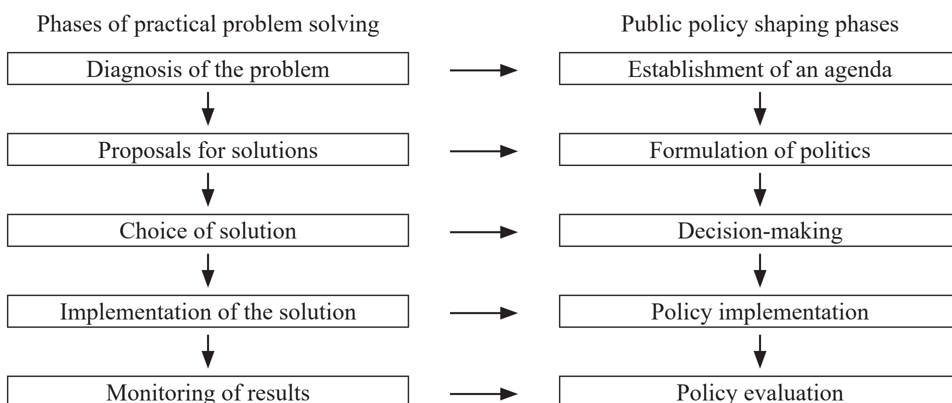

Figure 1. Problem solving and the formation of public policies

Source: Szarferberg 2016: 51.

Public policy therefore describes courses of action taken by public authorities in order to solve problems concerning the whole community. One of its elements is the system of activities and regulatory, legal and financial tools, which is used by a public authority and agencies that act on its behalf to achieve specific objectives. It can therefore be argued that public policies are skillfully composed sets of intervention instruments used by public authorities of every kind and level. It follows that the choice of appropriate public policy instruments strongly depends on the type and level of public authority that implements it [Chrabąszcz & Zawicki 2014: 17]. Instruments of public policy are a collection of techniques by which public authorities exercise their prerogatives in order to initiate changes with social consent. These instruments are operational forms of public intervention [Gór-

Table 1. Categories of policy instruments by B.G. Peters

Instruments of public policy	Description
Law	It is an instrument symbolizing the authority of the state, which is its prerogative. Its effectiveness depends on the ability to enforce it. The key is to monitor compliance with the law. The law serves as an instrument of delegating certain rights to citizens and regulating various types of activity undertaken by citizens, institutions, organizations. The aim of the law is to provide conditions for safety (e.g. at work, on the road) or economic development (e.g. antitrust regulations).
Services	These can be provided in the areas of education, health, safety, etc. The authority can provide these services using its own resources or can create conditions in which they are delivered by social and private entities.
Money	Money is distributed in a specific way, most often to meet the needs of citizens and for development purposes. Most often it is delivered in such a way as to provide incentives that in turn create good conditions for achieving social goals.
Taxes	The authority determines the amount of tax in relation to a specific tax base, but also various forms of collecting taxes and deducting them in specific situations. Deductions from the tax base are usually linked to specific social goals (e.g., allowances for the purchase of scientific aids or the use of online services).
Economic instruments	For example loans, credit guarantees, and insurance.
Persuasion	It consists in invoking values, feelings, including patriotic feelings, in order to affect certain groups of citizens and even entrepreneurs. Sometimes persuasion is reinforced by legal sanction (e.g. tax audits or loss of access to government procurement, subsidies). The authority uses means of persuasion to affect citizens, for example, to discourage them from a lifestyle that has an adverse effect on their health, which often results in higher public spending.

Source: Zybała 2014: 37.

niak & Mazur 2014: 52]. The most commonly used classification of instruments of public policy is the typology proposed by Peters, which is presented in Table 1.

The instruments presented above can be used in all kinds of public policy. There are several criteria in the literature to distinguish different types of public policy. From the perspective of this article, the most important criteria include the scope of coverage and area of interest. The first criterion, can be used to distinguish international policy, which includes activities of the State in the international environment. The goal of international policy is to undertake specific actions by co-operating with other countries or exerting pressure on them. Public policy which is implemented at the level of a particular state is referred to as a nationwide policy. The same applies to regional and local policies (local area-based activities, local community issues and addressing local problems). In terms of the area of

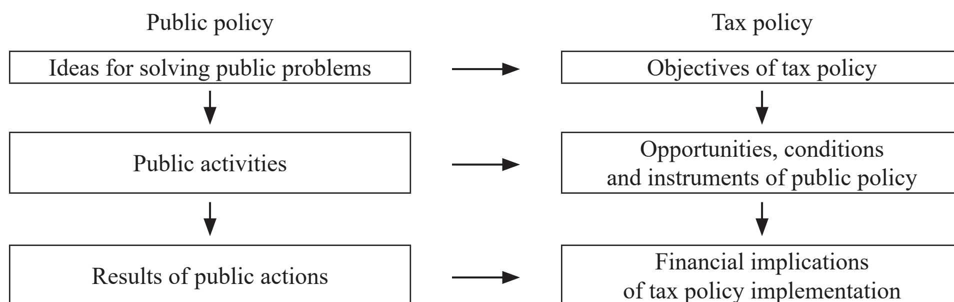

Figure 2. Conceptual links between public and tax policy

Source: own elaboration.

interest, policies can be classified into specific (or sectorial) policies, which focus on the development of selected areas of economic activity (at the expense of other areas) and involve activities and solving problems related to a particular field, (labor market, security, social welfare, infrastructure or spatial management). One area addressed by specific policies is tax policy, which is the main focus of the present study. The next part is devoted to the analysis of specific tax policy taking into consideration the three levels of public policy identified by Peters. Figure 2 shows the relationship between characteristics of public and tax policy.

2. Tax policy as an area of action for local government – goals and conditions

The concept of tax policy refers to the power of taxation, which in financial law refers to the power to make autonomous decisions concerning taxes. In Poland, the power to levy taxes is only reserved for communes and is one of its statutory powers [Klimska 2003: 149]. However, communes do not have the full power of taxation. Table 2 shows the scope of the power of taxation in relation to local taxes and charges.

Communes' power of taxation is only limited to taxes collected by local tax authorities. These include agricultural tax, forest tax, property tax and vehicle tax. For this reason, the next part of the study only focuses on revenues from this type of taxes.

As regards taxes listed above, communal councils have the right to [Przygodzka 2014: 335]:

– change tax rates (directly by setting specific rates; including rates for property taxes [Art. 5 of Act on Local Taxes and Charges] and vehicle tax [Art. 10 of Act on Local Taxes and Charges] or by lowering the purchase price of rye which

Table 2. Scope of the power of taxation exercised by communes in relation to local taxes and charges

Types of the power of taxation	Scope of the power of taxation
Active power of taxation in the broad sense (so-called full power of taxation)	Taxes and fees listed in the Act on Local Taxes and Charges (property, agricultural tax, forest tax, transportation, market fees, local charge, health charge, dog fees)
Active power of taxation in the narrow sense (so-called limited power of taxation)	Taxes and local fees regulated by separate laws, for example, tax on civil law transactions, flat-rate income tax in the form of a tax card, inheritance tax and gift tax, stamp duty
Passive power of taxation characterized by the inability of making changes in the structure of taxes and fees	Shares in income taxes (constituting budget revenues of both local government and central government)

Source: Filipiak 2015: 223.

is the basis for the agricultural tax rate [Art. 6 of Agricultural Tax Act] and the purchase price of buying lumber, which is the basis for calculating the forest tax [Art. 4 of Forest Tax Act];

– determine VAT-exempt supplies (the legislator, in addition to the directory of statutory exemptions, grants a certain extent of freedom to communes in offering exemptions that relate to each of the four types of taxation mentioned above [Art. 13 of Agricultural Tax Act; Art. 7 of Forest Tax Act; Art. 47and 12 of The Local Taxes and Charges Act].

The communal tax policy is related to the adopted development strategy. Thanks to specific taxes, a commune can influence the socio-economic situation within its borders, thus contributing to solving existing public problems. In addition, tax policy measures are designed to attract investors, stimulate the local economy by selectively influencing the development of one or more areas of the economy [Filipiak 2015: 225].

J. Łukomska and P. Swianiewicz propose the following list of main objectives tax policy pursued by the commune:

– fiscal goals, with respect to tax collection and the desire to balance the current budget (the commune tries to avoid generating deficits, and tries to maintain the quality of services, etc.), as well as its investment budget (by seeking new investments without running up excessive debt);

– stimulate local economic development by reducing business costs (e.g. reducing rates for all local businesses or exempting groups of companies, such as those that create new jobs) [Łukomska & Swianiewicz 2015: 109].

Maintain or increase political capital, primarily by satisfying the expectations of residents or businessmen (voters) about local tax rates and by setting tax rates

as a result of pressure from taxpayers/voters, or by "comparative competition", i.e. setting tax rates that do not differ from rates in neighboring communes (to avoid a negative vote).[1]

The implementation of the above-mentioned tax policy objectives is possible thanks to communal power of taxation. The scope of this power, which is used as an instrument of tax policy, is limited to setting different rates of local taxes depending on subject matter criteria, offering preferential treatment in the form of exemptions and reductions for certain supplies, remitting, deferring or spreading out payments over a period of time [Filipiak 2015: 222].

Utilizing the above mentioned instruments of tax policy, communes pursue specific goals, often competing ones, and often face a difficult dilemma. On the one hand, communes feel the unquestioned need to collect regular budget revenues, which creates a stable tax revenue stream. On the other hand, the decision to give up some of your potential revenue can be compensated by the possibility to affect the local socio-economic development. The need to strike a balance between these two objectives is the defining feature of tax policy [Śmiechowicz & Kozak 2016: 472].

3. The effects of municipal tax policies

In keeping with the assumptions of this study, one of the levels of public policy is the results of public actions. In the context of municipal tax policy, results include financial implications of exercising the power of taxation. The tax policy has certain fiscal effects in the form of adjustments in the amount of tax revenue. These effects may serve as a measure of the activity of local government in the application of preferential tax treatment as part of local tax policy [Dziuba 2016: 352].

As can be seen in Table 3, commune councils exercise the tax prerogatives granted to them. Undoubtedly, the growing trend in granting tax breaks and exemptions and setting local taxes and fees is an important instrument of fiscal policy, but also a way of stimulating the local economy and influencing the labor market. In the period 2007-2015, the value of financial effects resulting from the

[1] The study conducted by J. Łukomska and P. Swianiewicz under the NCN grant "The tax policy of the Polish municipalities as an instrument for competition for development," grant No. 2012/07/B/HS4/00453, showed that the most important motives for the municipal tax policy are those involving fiscal targets. According to respondents, striving for budget revenue (balancing budget) is the most important motive behind tax policies. Other motives related to the desire to maintain or increase political capital were included in the ranking. The most highly assed objective in this group was the need to meet the expectations of taxpayers and to set tax rates similar to those in neighboring municipalities. The desire to stimulate local economic development was rated slightly less important.

Table 3. Financial implications of municipal tax policy for 2007-2015 (PLN million)

Financial implications	2007	2008	2009	2010	2011	2012	2013	2014	2015
Reduction of top marginal tax rates, including:	1712.7	2083.1	2172.66	2010.21	2290.05	2922.91	3128.34	3068.73	3116.63
– agricultural tax	130.88	496.42	432.22	39.38	77.54	689.78	649.68	464.08	290.08
– property tax	1327.89	1302.39	1421.62	1629.71	1822.93	1825.81	2031.69	2122.13	2296.28
– forest tax	1.81	1.75	1.8	0.91	1.57	2.88	1.63	1.35	1.79
– vehicle tax	232.66	261.4	303.41	327.38	372.48	395.17	436.19	471.97	510.05
Reliefs and exemptions, including:	397.47	443.27	488.35	511.16	565.93	601.43	649.26	667.28	693.01
– agricultural tax	3.25	5.14	3.3	1.99	1.97	3.6	2.78	2.69	3.97
– property tax	383.08	431.82	479.27	505.14	558.25	593.45	642.	660.17	685.04
– forest tax	0.31	0.35	0.32	0.32	0.36	0.51	0.41	0.39	0.47
– vehicle tax	3.48	3.58	4.06	2.98	4.2	3.22	3.43	2.79	2.56
Redemption of tax arrears, including:	194.29	176.29	206.79	166.82	140.18	153.29	136.13	138.03	136.72
– agricultural tax	16.75	20.94	16.11	16.68	10.34	13.9	11.52	11.49	10.92
– property tax	142.1	120.23	127.65	116.62	98.54	105.54	95.69	94.82	92.52
– forest tax	0.4	0.43	0.41	0.48	0.34	0.33	0.38	0.35	0.31
– vehicle tax	7.2	6.18	8.25	7.26	5.41	5.2	4.85	5.86	4.59

Spreading out payments, post-poning payment deadlines, including:	112.06	86.39	124.53	365.06	90.45	100.46	99.52	96.7	88.98
– agricultural tax	7.56	8.6	6.72	4.49	3.68	4.92	3.94	3.6	3.59
– property tax	85.65	56.79	93.75	259.51	64.95	74.23	71.86	70.18	64.76
– forest tax	0.03	0.03	0.03	0.02	0.02	0.03	0.03	0.02	0.03
– vehicle tax	6.11	6.35	7.15	6.03	5.55	6.12	6.53	6.22	5.34
Total financial impact	2 416.51	2789.05	2992.33	3053.25	3086.61	3778.09	4013.25	3970.74	4035.35
Structure (in %):									
Reduction of top marginal tax rates	70.87	74.69	72.61	65.84	74.19	77.36	77.95	77.28	77.23
Relief and exemptions	16.45	15.89	16.32	16.74	18.34	15.92	16.18	16.81	17.17
Redemption of tax arrears	8.04	6.32	6.91	5.46	4.54	4.06	3.39	3.48	3.39
Spreading out payments, post-poning payment deadlines	4.64	3.10	4.16	11.96	2.93	2.66	2.48	2.44	2.21

Source: based on reports on the implementation of the budget by units of local government for the period 2007-2015 (data of the Ministry of Finance).

use of taxation ranged from PLN 2.4 billion in 2007 to over PLN 4 billion in 2015 (the highest increase was observed between 2011 and 2012 – almost PLN 700 million). Communes most often choose to lower tax rates. Decisions of this kind account for 77.23% of the total financial impact in 2015. On average, over 17% of the financial impact in Polish communes is generated through reliefs and exemptions. To a lesser extent, communes use the power to remit tax arrears, spread out tax payments over a period or defer payments (respectively around 3.39% and 2.21% of the total financial impact in 2015). In the case of these two instruments, it can be noted that in 2007-2015 their share in the structure of fiscal consequences has fallen.

Taking into account the type of commune, the biggest financial implications of tax policy could be observed in rural areas (Table 4): their value in 2014 amounted to nearly PLN 2 bn, which accounted for about 50% of the total value of all financial effects. Urban- rural communes had the smallest share in the financial impact of fiscal policy in 2014, which amounted to more than 15%.

Table 4. Financial implications of municipal tax policy for the years 2007-2014 by type of commune (PLN million)

Type of commune	2007	2008	2009	2010	2011	2012	2013	2014
Rural communes	1000.42	1304.55	1383.15	1221.29	1346.04	1837.00	1969.26	1955.09
Urban communes	528.21	506.18	573.68	659.94	629.93	618.56	640.47	634.22
Urban-rural communes	887.87	978.33	1035.50	1172.02	1110.64	1322.53	1403.53	1381.43
All communes	2416.51	2789.05	2992.33	3053.25	3086.61	3778.09	4013.25	3970.74

Source: based on reports on the implementation of the budget by units of local government in the period 2007-2015 (data of the Ministry of Finance).

The financial implications of the tax policy, as previously mentioned, are related to the use of lower tax rates or exemptions, which cause a decrease in the commune's budget income. In the literature of the subject, financial implications of taxation are referred to as "lost income" [Przygodzka 2014: 337]. Table 5 shows the share of lost income in total income and in the commune's own income, as well as the share of particular taxes in lost income.

In 2014, communes in general "gave up" 4.7% of total income and 9.52% of their own income. In keeping with the previous conclusions, the level of lost income was the highest in rural communes. By exercising the power of taxation, these commune lost 5.28% of total income and 12.59% of their own income. Urban-rural and urban communes have better indicators: in communes of this type the share of lost income in their own income corresponds to 9.50% and 5.46%, respectively.

Table 5. The share and structure of "lost income" in communes in 2014 (%)

Type of commune	Share of lost income in total income	Share of lost income in own income	The share of individual categories of taxes in lost income			
			agricultural tax	forest tax	property tax	vehicle tax
Rural communes	5.28	12.59	17.43	0.06	69.66	11.86
Urban communes	3.33	5.46	0.68	0.05	80.59	16.13
Urban-rural communes	4.85	9.50	9.91	0.04	77.77	11.05
All communes	4.70	9.52	12.14	0.05	74.23	12.26

Source: based on reports on the implementation of the budget by units of the local government in the period 2007-2015 (data of the Ministry of Finance).

The largest share of lost income is related to property tax (this highlights its importance in the local finance system). Varying effects of tax policy can also be seen with respect to vehicle tax transport and agricultural tax, depending on the kind of commune. The share of these two taxes reflects the commune's character: in rural communes, a higher share of lost income is associated with agricultural tax, whereas in urban communes – with vehicle tax. Forest tax plays a minor role in all types of communes.

Conclusion

Public policy is the process through which government/public authority translates its political visions into strategies, plans and programs to achieve expected effects in actions for the common good. Undoubtedly, the task of developing tax policy poses a challenge for communes. It is difficult to determine the optimum direction of tax policy making sure that it contributes to solving public problems, is accepted by the local community while providing sufficiently high revenues for the commune budget. Tax policy as a local public policy consists of public actions aimed at solving public problems and leads to results which are indicative of the level and quality of this policy.

The implementation of local public policy is possible by means of certain instruments and prerogatives. In the case of tax policy, communes typically take advantage of the possibility to lower top marginal tax rates in an effort to support entrepreneurs, farmers and ordinary residents. In the short term, however, this reduces budget revenues. The analysis of financial reports submitted by communes shows that budget revenues lost in 2015 as a result of tax policy amounted to over

PLN 3 billion. Property tax has the largest share in the financial impact of local tax policies. With regard to the type of commune, the greatest loss of tax revenue was observed for rural communes.

In the longer term, however, skillful development of tax policy by the commune can ensure regular and substantial budgetary receipts, while increasing the commune's attractiveness. Tax policy can help to increase employment, improve the inhabitants' quality of life and conditions of doing business activity for entrepreneurs.

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Polityka podatkowa gminy jako przykład lokalnej polityki publicznej – cele, możliwości, uwarunkowania

Streszczenie. *Polityka publiczna oznacza określone sposoby postępowania władz publicznych w celu rozwiązania problemów o zbiorowym znaczeniu. Związana jest z funkcjonowaniem państwa oraz samorządu. W opracowaniu przyjęto podejście B.G. Petersa, który założył, że polityka publiczna obejmuje pomysły na rozwiązania problemów publicznych, działania publiczne (realizowane poprzez określone instrumenty) oraz ich rezultaty. Celem artykułu jest analiza lokalnej polityki publicznej prowadzonej przez samorząd gminny na przykładzie polityki podatkowej. W pierwszej części dokonano charakterystyki lokalnej polityki publicznej jako celu działania samorządu terytorialnego. Szczególną uwagę skupiono na podstawowych etapach tworzenia polityki publicznej, jej instrumentach, a także powiązaniu jej z problemami publicznymi. Drugą część opracowania poświęcono polityce podatkowej, jej celom i uwarunkowaniom. W trzeciej części przedstawiono skutki prowadzonej przez gminy polityki podatkowej w latach 2007-2015.*

Słowa kluczowe: *polityka publiczna, polityka podatkowa, instrumenty i skutki polityki podatkowej*

Selected Issues Shaping Fiscal and Financial Stability

Zeszyty Naukowe
Wyższej Szkoły Bankowej w Poznaniu
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Staatsverschuldung bei alternativen Zinsstrategien

Zusammenfassung. *Die Staatsverschuldung wird häufig in der Wirtschaftsliteratur diskutiert. Es gibt zwei allgemeine Positionen: (1) Die nationale Verschuldung ist ein Übel, weil es ein nie endender Prozess ist und (2) eine Staatsverschuldung notwendig ist, weil ein Staat seine Zukunft sichern muss. Um einen Rat über die Richtigkeit beider Positionen zu geben, wird in diesem Artikel ein einfaches Modell formuliert. Das Modell zeigt, dass die Staatsverschuldung ein nie endender Prozess ist, wenn die Effizienz nicht gleich eins ist. Es gibt keine Chance, die Staatsschulden zurückzuzahlen. Selbst die Wachstumspolitik ist nicht in der Lage, das Problem zu lösen. Ein erfolgreiches Instrument zur Steuerung der Staatsverschuldung ist die Zinspolitik. Ein hohes Zinsniveau führt bereits nach einigen Perioden zu Staatsbankrotten. Aber ein abnehmendes Zinsniveau verlängert die Zeit bis zum Staatsbankrott. Ein Zinsniveau von Null und keine Pflicht zur Rückzahlung der Staatsverschuldung werden den Staatsbankrott verhindern. Wenn es zusätzlich möglich ist, neue Staatsschulden zu stoppen, ist es möglich, eine Begrenzung der Staatsverschuldung zu finden. Ein negatives Zinsniveau bei nationalen Anleihen ist ein Instrument, das die Möglichkeit bietet, Staatsschulden zurückzuzahlen.*

Schlüsselwörter: *Staatsverschuldung, Staatsschuldenmanagement, Zinspolitik, Gleichgewicht, Wachstumspolitik*

1. Einleitung

Die Staatsverschuldung ist ein Thema, das in der ökonomischen Literatur seit langem intensiv und kontrovers diskutiert wird. Die Diskussion zur Staatsverschuldung lässt sich grob in zwei Entwicklungsphasen einteilen [Zeitel 1969:

441] eine verschuldungsfeindliche und eine verschuldungsfreundliche Phase. Die älteren Wissenschaftler waren größtenteils verschuldungsfeindlich eingestellt. Sie sahen in der Staatsverschuldung einen Missstand der staatlichen Finanzpolitik. Als markantes Beispiel gilt Ricardo, der die Staatsverschuldung als eine schreckliche Geißel und Plage einer Nation bezeichnete [Ricardo 1852: 546; Zeitel 1969: 458].

In der zweiten Entwicklungsphase ist dann eine positive Einstellung zur Staatsverschuldung zu verzeichnen. Als frühe Wegbereiter dieser positiven Einstellung gelten v. Stein [Stein1878: 340] und Schanz [Schanz 1908: 1-34; Zeitel 1969: 458]. In dieser Phase wurden u.a. Fälle bzw. Kriterien für die Staatsverschuldung, Vor- und Nachteile der Staatsverschuldung, Grenzen der Staatsverschuldung, die optimale Struktur der Staatsverschuldung (dept management) sowie die Auswirkungen der Staatsverschuldung auf die Einkommens- und Vermögensverteilung erörtert. In jüngster Zeit wurde vor allem die Staatsverschuldung im Rahmen der Europäischen Union diskutiert. Es standen die Begrenzung der Staatsverschuldung der einzelnen Mitgliedstaaten und die Verteilung der Verschuldung in föderalen Staaten im Vordergrund.

Neben der aufgezeigten Entwicklungstendenz in der Einstellung zur Staatsverschuldung, ist die Entwicklungstendenz hinsichtlich der realisierten Staatsverschuldung zu betrachten. Diesbezüglich soll lediglich auf die Staatsverschuldung in der Bundesrepublik Deutschland Bezug genommen werden. Für die Bundesrepublik Deutschland ist in der Anfangsphase des Existenzzeitraumes zunächst eine geringe Staatsverschuldung festzustellen [Dreißig 1980: 509]. Es gab zudem Finanzreserven, die als „Juliusturm“ [Wandel 1980: 480] bezeichnet wurden. Auf die Phase der geringen öffentlichen Verschuldung folgte dann bis heute ein nicht zu bremsender Anstieg der Staatsverschuldung.[1]

2. Argumente für und gegen die Staatsverschuldung

Die Argumente von Ricardo [1852: 546] gegen die Staatsverschuldung sind nicht theoretischer Natur, also nicht auf der Basis eines Modells abgeleitet, sondern Erfahrungen aus seinem Leben. Er sieht als Auswirkungen der Staatsverschuldung ein Ansteigen des Handels und im Wirtschaftssystem auftretende Verzögerungen und Störungen für die aber nicht der Anstieg des Handels verantwortlich ist.

Die Argumentation von Stein [1878: 347], dass ein Staat der keine Staatsverschuldung hat zu wenig für seine Zukunft leistet oder zu viel von seiner Gegenwart verlangt, ist logisch überzeugend, wenn man ohne Grundlage eines volkswirtschaftlichen Modells einen verbalen Zusammenhang zwischen Gegenwart

[1] Vgl. Statistisches Bundesamt.

und Zukunft herstellt. Die Argumentation ist aber nur überzeugend, wenn die Entwicklung von der Gegenwart bis in die Zukunft unter bestimmten Bedingungen abläuft. Diese Bedingungen sind als Annahmen in ein entsprechendes Modell zu übernehmen. Leider hat sich von Stein mit diesen Bedingungen nicht auseinandergesetzt.

Das Argument, dass Staatsverschuldung ungefährlich ist, gilt, wenn aufgrund des Multiplikatoreffekts der Anstieg des Volkseinkommens höher ist als die Staatsverschuldung (z.B. eine Staatsverschulung von $100 und ein Anstieg des Volkseinkommens um $300 oder $400) [Domar 1944: 801]. Dieses Argument unterstellt ein ungleichgewichtiges Wachstum und sieht unter dieser Bedingung keine Gefahren in der Staatsverschuldung.

Das Argument der Lastengleichheit zwischen den Generationen kann je nach Situation für oder gegen die Staatsverschuldung benutzt werden. Da eine Gleichheit der Lastenverteilung im Prinzip nie erreicht wird, sind künftige Generationen zu belasten oder nicht. Eine Gleichverteilung der Last bzw. der Kosten setzt voraus, dass auch die Nutzen gleich verteilt sind. Es ist bekannt, dass sich Wirtschaftsgüter abnutzen und technisch veralten. Eine Gleichverteilung der Nutzen ist daher sehr schwierig bzw. in der Praxis nur im Ausnahmefall gegeben. Entweder werden künftige Generationen zu stark oder zu schwach belastet. Investitionen für die Zukunft über Kredite zu finanzieren und künftige Generationen, die den Nutzen haben mit den entsprechenden Kosten zu belasten, ist folglich nicht ganz einfach.

Das Argument, eine antizyklische Konjunkturpolitik mit Hilfe von Staatsverschuldung zu finanzieren, kann nur überzeugen, wenn es keine anderen Instrumente der wirkungsvollen Konjunkturpolitik gibt und die Verschuldung in der Phase der Hochkonjunktur auch tatsächlich wieder abgebaut wird und nicht aufgrund einer argumentativen Finanzierungsnotwendigkeit von anderen Löchern im Staatshaushalt, sogenannten Wahlgeschenken etc., auf den Abbau verzichtet wird.

Das Auftreten der Verschuldungsfalle sollte nicht verkannt werden. Die Handlungs- bzw. Funktionsunfähigkeit des Staates ist die Folge. Entsprechende unerwünschte Auswirkungen auf die Wirtschaftslage sind nicht zu leugnen.

3. Schwächen der Staatsverschuldungsargumentation

Die Schwächen der Argumentation für die Staatsverschuldung sind einerseits in der fehlenden modelltheoretischen Basis zu sehen. Dies gilt überwiegend für die Argumente in der älteren Literatur. Andererseits werden Modellannahmen häufig nicht so deutlich erläutert, dass es der praktischen Wirtschaftspolitik gelingt, die Gültigkeit der Annnahmen zu erkennen. Ferner ist es in länger andauernden Entwicklungsprozessen nicht möglich die Annahmen einzuhalten. Die Argumentati-

on für aber auch gegen die Staatsverschuldung ist daher zu überprüfen. Dazu wird von der folgenden These 1 ausgegangen, die aufgrund der praktischen Erfahrung mit der Staatsverschuldung (nicht zuletzt in Deutschland) aufgestellt wurde.

These 1: Staatsverschuldung ist ein nicht zu bremsender Prozess, in dem die Staatsverschuldung ständig ansteigt.

Die These ist auf der Basis einer einfach strukturierten Volkswirtschaft, in der nur ein Gut hergestellt wird, zu überprüfen. Der einzel- und der gesamtwirtschaftliche Produktionsprozess ist identisch. Der Produktionsprozess kann durch eine einfache monetäre Produktionsfunktion (Witte-Produktionsfunktion [Witte 2010: 17-24]) abgebildet werden.

4. Modell zur Beurteilung der Staatsverschuldung

Um die Staatsverschuldung zu beurteilen, ist ein Modell zu konstruieren, an dem der Sachverhalt demonstriert und diskutiert werden kann. In der ökonomischen Literatur dienen sehr häufig das neoklassische Modell von Domar [1944: 823-825] oder Weiterentwicklungen dieses Modells als Referenzbasis. Hier soll hingegen von einem Modell einer einfach strukturierten Volkswirtschaft ausgegangen werden, deren Leistung mit Hilfe einer wertbezogenen Produktionsfunktion abgebildet wird.

Es wird unterstellt, dass in der Volkswirtschaft nur ein Gut hergestellt wird. Der Produktionsprozess kann durch eine wertbezogene Produktionsfunktion dargestellt werden. Die einzelwirtschaftliche Produktionsfunktion ist gleichzeitig auch die gesamtwirtschaftliche Produktionsfunktion. In der Volkswirtschaft leben nur zwei Personen. Sie arbeiten in dem einen Unternehmen und produzieren das eine Gut, das sie auch kaufen und konsumieren.

Die wertbezogene (monetäre) Produktionsfunktion hat die folgende Form [Witte 2007: 57-69; 2008: 11-42; 2009: 61-76; 2010: 17-24]:

$$Y = w\,(AK + KK) \qquad (1)$$

mit:

Y – Bruttosozialprodukt/Bruttoinlandsprodukt/Erlös
AK – Kosten der eingesetzten Arbeit
KK – Kosten des eingesetzten Kapitals
w – Wertschöpfungsfaktor

Für diese wertbezogene Produktionsfunktion, die alle Produktionsfaktoren mittels der beiden Integrationsfaktoren Arbeit und Kapital monetär abbildet, sind jetzt Werte zu finden, die für die oben beschriebene einfach strukturierte Volks-

wirtschaft die Funktionsfähigkeit garantieren und zudem den Tatbestand der Staatsverschuldung veranschaulichen können.

Dazu wird ferner unterstellt, dass von dem einen Gut zwei Mengeneinheiten hergestellt und zum Preis von 10 Geldeinheiten (GE) verkauft werden. Es gilt:

$$Y = p \times x \tag{2}$$

mit:

Y – Erlös
P – Preis
x – hergestellte und verkaufte Menge des einen Gutes

Mit den unterstellten Werten wird aus Gleichung (2) Gleichung (3):

$$Y = 10 \times 2 = 20 \tag{3}$$

Zudem wird unterstellt, dass die beiden Mitarbeiter des Unternehmens je einen Lohn von fünf Geldeinheiten pro Mengeneinheit des hergestellten Produktes bekommen. Der eine Mitarbeiter ist als Arbeiter der andere als Kapitaleigentümer zu bezeichnen. Es gilt:

$$K(x) = x\,(AK + KK) \tag{4}$$

mit:

$K(x)$ – Produktionskosten in Abhängigkeit der hergestellten Produktionsmenge
AK – Kosten des Produktionsfaktors Arbeit
KK – Kosten des Produktionsfaktors Kapital
x – Produktionsmenge

Setzt man nun die unterstellten Werte in Gleichung (4) ein, so erhält man Gleichung (5):

$$K(x) = 2\,(5 + 5) = 20 \tag{5}$$

Setzt man die gemäß Gleichung (3) und Gleichung (5) ermittelten Werte in Gleichung (1) ein und löst sie nach w auf, ergibt sich Gleichung (6):

$$w = 10 \times 2 \,/\, 10 \times 2 = 1 \tag{6}$$

Für die unterstellten Werte ergibt sich somit für den Produktionsprozess des einen Gutes ein Wertschöpfungsfaktor von eins. Das Unternehmen arbeitet im Break-Even-Point. Es macht keinen Gewinn und keinen Verlust. Ferner besteht ein Marktgleichgewicht. Die gesamte produzierte Menge des einen Produktes wird verkauft. Es gibt keinen Unterschuss und keinen Überschuss. Das Angebot

ist gleich der Nachfrage. Dies ist der Fall, wie das Beispiel zeigt, wenn das Unternehmen im Break-Even-Point arbeitet. Ferner zeigt das Beispiel, dass in dieser Marktsituation weder das Unternehmen noch die Mitarbeiter Kredite aufnehmen müssen, um den notwendigen Zahlungen nachkommen zu können.

Diese Situation kann über viele Wirtschaftsperioden ohne Krisen bestehen. In Tabelle 1 ist die Entwicklung der einfach strukturierten Volkswirtschaft für fünf Perioden dargestellt.

Tabelle 1. Entwicklung der einfach strukturierten Volkswirtschaft für $w = 1$

Wirtschafts-periode	Produktionsfunktion	∑ Überschuss	Kreditvolumen
1. Periode	$w = 10 \times 2 / 10 \times 2 = 1$	0	0
2. Periode	$w = 10 \times 2 / 10 \times 2 = 1$	0	0
3. Periode	$w = 10 \times 2 / 10 \times 2 = 1$	0	0
4. Periode	$w = 10 \times 2 / 10 \times 2 = 1$	0	0
5. Periode	$w = 10 \times 2 / 10 \times 2 = 1$	0	0

Quelle: eigene Darstellung.

Die Situation der einfach strukturierten Volkswirtschaft wird in einer ersten Variante derart verändert, dass der Wertschöpfungsfaktor des Unternehmens jetzt größer als eins ist ($w > 1$). Das Unternehmen operiert im Bereich oberhalb des Break-Even-Points und macht Gewinn. Um diese Situation zu erwirken, wird der Preis des einen Gutes von 10 auf 12 Geldeinheiten erhöht. Alle anderen Werte werden nicht verändert. Gleichung (6) wird zu Gleichung (7):

$$w = 12 \times 2 / 10 \times 2 = 1{,}2 \tag{7}$$

Der Wertschöpfungsfaktor steigt von eins (1) auf einskommazwei (1,2). Die Folge ist, dass bei den Löhnen ein Unterschuss von zwei Geldeinheiten entsteht. Die Mitarbeiter des Unternehmens verdienen zu wenig, um alle hergestellten Mengeneinheiten des einen Gutes zu kaufen. Es besteht kein Marktgleichgewicht. Die Produktionsmenge würde ausreichen, um ein Marktgleichgewicht herzustellen. Da das Produkt aber zu teuer ist, um abgesetzt zu werden, verhindert die wertbezogene Beziehung das Marktgleichgewicht.

In dieser Marktsituation gibt es zwei Möglichkeiten: (1) das Ungleichgewicht bleibt bestehen, dann entsteht ein Angebotsüberschuss oder (2) es wird ein Gleichgewicht hergestellt, indem die Mitarbeiter des Unternehmens Kredit aufnehmen bzw. staatliche Subventionen in Höhe von zwei Geldeinheiten bekommen, um den Angebotsüberschuss zu kaufen.

Die Entwicklung der einfach strukturierten Volkswirtschaft für einen Wertschöpfungsfaktor größer eins ($w > 1$) ist in Tabelle 2 für fünf Perioden dargestellt. Man erkennt, dass in jeder folgenden Wirtschaftsperiode der Lohnunterschuss

Tabelle 2. Entwicklung der einfach strukturierten Volkswirtschaft für $w > 1$

Wirtschafts-periode	Produktionsfunktion	∑ Unterschuss bei der Entlohnung	∑ Kreditvolumen
1. Periode	$w = 12 \times 2 / 10 \times 2 = 1{,}2$	4	4
2. Periode	$w = 12 \times 2 / 10 \times 2 = 1{,}2$	8	8
3. Periode	$w = 12 \times 2 / 10 \times 2 = 1{,}2$	12	12
4. Periode	$w = 12 \times 2 / 10 \times 2 = 1{,}2$	16	16
5. Periode	$w = 12 \times 2 / 10 \times 2 = 1{,}2$	20	20

Quelle: eigene Darstellung.

und das Kreditvolumen um vier Geldeinheiten zunehmen. Nach fünf Perioden betragen der Unterschuss und das Kreditvolumen bereits 20 Geldeinheiten.

In dieser Situation steigt nicht nur das Kreditvolumen, sondern es besteht auch keine Möglichkeit den Kredit je zurückzuzahlen. Da die Mitarbeiter im Prinzip nicht kreditwürdig sind, bleibt bei Kreditfinanzierung und bei Subvention als Lösung nur die Staatsverschuldung. Die Staatsverschuldung steigt aber ebenfalls ständig und kann nicht zurückgezahlt werden. Zwischen privater Kreditaufnahme und Staatsverschuldung besteht nur der Unterschied, dass dem Staat in der Praxis und eigentlich auch in der ökonomischen Theorie Kreditwürdigkeit zugestanden wird.

In einer zweiten Variante ist jetzt zu zeigen, welche Veränderungen auftreten, wenn ein Wertschöpfungsfaktor kleiner eins ($w < 1$) unterstellt wird. Es werden in diesem Falle alle Werte der Ausgangssituation konstant gehalten außer der Entlohnung der Mitarbeiter des Unternehmens. Die Entlohnung jedes Mitarbeiters steigt von fünf auf sechs Geldeinheiten pro Produkteinheit, so dass insgesamt 24 Geldeinheiten Entlohnung gezahlt werden. Der Wertschöpfungsfaktor sinkt unter eins ($w = 0{,}8333$). Aus Gleichung (6) wird Gleichung (8):

$$w = 10 \times 2 / 12 \times 2 = 0{,}83333 \tag{8}$$

In dieser Situation besteht wertmäßig kein Marktgleichgewicht. Das Unternehmen arbeitet unterhalb des Break-Even-Points und macht Verlust. Die Mitarbeiter haben mehr Geld als sie für den Kauf des einen Gutes benötigen bzw. es besteht ein Unterschuss hinsichtlich des Erlöses. Der Markt ist zwar mengenmäßig geräumt (mengenmäßiges Marktgleichgewicht), aber das Unternehmen muss Kredit aufnehmen, um die Mitarbeiter bezahlen zu können.

Auch in dieser Situation gibt es zwei Lösungsmöglichkeiten, um ein wertmäßiges Marktgleichgewicht herzustellen: (1) Kreditaufnahme des Unternehmens und (2) staatliche Subvention bzw. staatliche Kreditaufnahme. Das Unternehmen muss in jeder Wirtschaftsperiode vier Geldeinheiten Kredit aufnehmen. Nach fünf Wirtschaftsperioden beträgt das Kreditvolumen 20 Geldeinheiten (vgl. Tabelle 3). Die

Tabelle 3. Entwicklung der einfach strukturierten Volkswirtschaft für $w < 1$

Wirtschafts-periode	Produktionsfunktion	∑ Unterschuss beim Erlös	∑ Kreditvolumen
1. Periode	$w = 10 \times 2 / 12 \times 2 = 0{,}83333$	4	4
2. Periode	$w = 10 \times 2 / 12 \times 2 = 0{,}83333$	8	8
3. Periode	$w = 10 \times 2 / 12 \times 2 = 0{,}83333$	12	12
4. Periode	$w = 10 \times 2 / 12 \times 2 = 0{,}83333$	16	16
5. Periode	$w = 10 \times 2 / 12 \times 2 = 0{,}83333$	20	20

Quelle: eigene Darstellung.

Situation ist analog der in Variante 1 zu interpretieren. Das Kreditvolumen steigt in jeder Periode und es besteht keine Möglichkeit die Kredite zurückzuzahlen.

Aus dem Modell der einfach strukturierten Volkswirtschaft und seinen zwei Varianten können folgende Schlüsse gezogen werden: (1) Für einen Wertschöpfungsfaktor ungleich eins ($w \neq 1$) entstehen Marktungleichgewichte und (2) von Wirtschaftsperiode zu Wirtschaftsperiode ansteigende Kreditvolumina. Die Kredite können nicht zurückgezahlt werden. (3) Marktgleichgewichte bestehen nur für einen Wertschöpfungsfaktor von eins ($w = 1$). Es treten auch in folgenden Wirtschaftsperioden keine Marktungleichgewichte auf und es werden keine Kredite benötigt.

Als Fazit ist festzuhalten, dass die oben aufgestellte These 1, die Staatsverschuldung ist ein nicht zu bremsender Prozess, in dem die Staatsverschuldung immer weiter steigt, nur durch das Modell, in dem der Wertschöpfungsfaktor gleich eins ist ($w = 1$) widerlegt werden kann. Für die einfach strukturierte Volkswirtschaft gilt These 1, wenn der Wertschöpfungsfaktor ungleich eins ist ($w \neq 1$).

5. Die Begrenzung der Staatsverschuldung

Da festgestellt wurde, dass Staatsverschuldung im Modell der einfach strukturierten Volkswirtschaaft für den Fall eines Wertschöpfungsfaktors ungleich eins ($w \neq 1$) ein nicht zu bremsender Prozess ist, soll geprüft werden, ob es eine wirksame Begrenzung der Staatsverschuldung gibt. Allerdings ist dies nur eine Überprüfung anhand von einem Zahlenbeispiel auf der Basis des oben entwickelten Modells. Im Prinzip ist klar, dass dieser Prozess nicht wirksam begrenzt werden kann. Auf der Basis des obigen Modells wird Tabelle 4 aufgestellt und ein Vergleich zwischen absoluter und relativer Entwicklung der Staatsverschuldung dargestellt. Zunächst wird die Entwicklung für die Variante 1, in der der Wertschöpfungsfaktor des im Modell dargestellten gesamtwirtschaftlichen Produktionsprozesses größer als eins ist ($w > 1$), veranschaulicht.

Aus Tabelle 4 ist zu ersehen, dass für die Variante 1 des obigen Modells ($w > 1$, ohne ökonomisches Wachstum, s.u.) die Staatsverschuldung ohne die Berechnung von Zinsen nach sechs Wirtschaftsperioden 100 Prozent des Bruttosozialprodukts, des Bruttoinlandsprodukts bzw. des Erlöses beträgt. Dieses Beispiel verdeutlicht die Problematik der Festsetzung einer Grenze für die Staatsverschuldung in Form eines Prozentsatzes vom Bruttosozialprodukt, des Bruttoinlandproduktes bzw. des Erlöses oder in Höhe einer anderen ökonomischen Größe, wie z.B. den Investitionsausgaben. Bereits nach einer Reihe von wenigen Wirtschaftsperioden wird es unmöglich, diese Grenze einzuhalten, gleich ob sie als absoluter oder relativer Wert formuliert ist. Auf der Basis dieser Aussagen kann eine zweite These formuliert werden:

These 2: Eine Begrenzung der Staatsverschuldung ist nicht durchsetzbar.

Tabelle 4. Entwicklung der Staatsverschuldung für $w > 1$

Wirtschafts-periode	BSP/BIP/Erlös (Y in GE)	∑ Verschuldung (absolut, in GE)	∑ Verschuldung (relativ, Anteil an BSP/BIP/ Erlös in %)
1. Periode	24	4	16,6666
2. Periode	24	8	33,3333
3. Periode	24	12	50,0000
4. Periode	24	16	66,6666
5. Periode	24	20	83,3333
6. Periode	24	24	100,0000

Quelle: eigene Darstellung.

Ferner ist herauszufinden, wann die Zinslast durch die Staatsverschuldung der Höhe des Bruttosozialprodukts, des Bruttoinlandsprodukts bzw. des Erlöses entspricht und der Staat in der folgenden Wirtschaftsperiode zahlungsunfähig wird. Es soll eine Verzinsung des jährlichen Verschuldungsvolumens von 10 Prozent unterstellt werden. Die entsprechenden Werte sind in Tabelle 5 ausgewiesen.

Aus Tabelle 5 ist ersichtlich, dass für die gewählten Werte die Verschuldungslast in der 5. Wirtschaftsperiode höher ist als das Bruttosozialprodukt, das Bruttoinlandsprodukt bzw. der Erlös. In dieser Wirtschaftsperiode kann der Staat die Zinsen für die Verschuldung nicht mehr aufbringen. Es tritt der Staatsbankrott ein.

Diese modellhafte Berechnung des Zeitpunktes für den Staatsbankrott ist allerdings sehr theoretisch. Eine realistische Darstellung der Zusammenhänge ergibt sich nur direkt aus der gesamtwirtschaftlichen Produktionsfunktion, der gesamtwirtschaftlichen Erlösfunktion und der gesamtwirtschaftlichen Kostenfunktion mit den entsprechenden oben unterstellten Werten. Die Funktionen sind

in den Gleichungen (1), (2) und (4) noch einmal dargestellt. In den Gleichungen (5) bis (12) sind die entsprechenden Werte aus dem obigen Modell in der Variante 1 ausgewiesen.

$Y = w\ (AK + KK)$ gesamtwirtschaftliche Produktionsfunktion (1)

$Y = p \times x$ gesamtwirtschaftliche Erlösfunktion (2)

$K(x) = x\ (AK + KK)$ gesamtwirtschaftliche Kostenfunktion (4)

$K(x) = 2\ (5 + 5) \quad K = 20$ (5)

$w = 1{,}2$ (7)

$Y = 12 \times 2 \quad Y = 24$ (9)

$Y = w \times K(x)$ (10)

$12 \times 2 = 1{,}2\ [(2\ (5 + 5)]$ (11)

$24 = 1{,}2\ (20)$ (12)

Tabelle 5. Entwicklung der Staatsverschuldung für $w > 1$ (in GE)

Wirtschafts-periode	BSP/ BIP/Erlös	Verschuldung Vorjahr	Neuver-schuldung	Verschuldung	Zinsen
1. Periode	24	0,0	4	4,0	0,4
2. Periode	24	4,4	4	8,4	0,84
3. Periode	24	9,24	4	13,24	1,324
4. Periode	24	14,564	4	18,564	1,8564
5. Periode	24	20,4204	4	24,4204	2,44204
6. Periode	24	26,86244	4	30,86244	3,086244
7. Periode	24	33,948684	4	37,948684	3,7948684
8. Periode	24	41,7435524	4	45,7435524	4,57435524
9. Periode	24	50,31790764	4	54,31790764	5,43179076
10. Periode	24	59,7496984	4	63,7496984	6,37496984

Quelle: eigene Darstellung.

Aus Gleichung (12) erkennt man, dass das Kreditvolumen vier Geldeinheiten (4 GE) bzw. zwei Geldeinheiten pro Produktionsmenge (2 GE pro PE) beträgt, das der Staat aufnehmen muss, um die Arbeiter zu subventionieren, so dass sie die hergestellten Produkteinheiten kaufen können. Man erkennt auch, dass der Staat für diesen Kredit keine Zinsen zahlen kann, da er diese von den Subventionen abziehen müsste. Würde der Staat Zinsen bezahlen, könnte er weniger Subvention auszahlen. Die Konsequenz wäre, dass die Arbeiter zu wenig Geld hätten, um die hergestellte Produktmenge zu kaufen. Die Volkswirtschaft würde nicht funktionieren. Es gäbe kein Marktgleichgewicht, sondern in jeder Wirtschaftsperiode einen Produktionsüberschuss.

Aus dieser Sicht erscheint das Zinsverbot, das in den „alten“ Schriften der Weltreligionen [Die Mischna 2008: 61-63; Werner 1997: 11-20; Die Bibel 1966:

96, 152, 236, 610, 872; Kloft 1997: 19-34; Hanke-Wehrle 1997: 288][2] verankert ist und zum Teil auch heute noch vertreten bzw. diskutiert wird, einleuchtend und praktikabel.

Allerdings muss festgestellt werden, dass Subventionierung über Staatsverschuldung nur eine Lösung ist. Die Alternative ist, die Subventionierung über Einführung einer Steuer zu finanzieren. In diesem Fall wäre der über die Kosten des Unternehmens hinausgehende Erlös durch die Besteuerung des Mehrwertes (der Wertschöpfung) mittels einer Mehrwertsteuer in Höhe von vier Geldeinheiten (4 GE) bzw. zwei Geldeinheiten pro Produkteinheit (2 GE pro PE) abzuschöpfen und als Subvention an die Arbeiter auszuzahlen. Es zeigt sich in diesem Fall, dass die Subvention nicht durch Kosten der Staatsführung bzw. der Steuerverwaltung geschmälert werden darf. Es träte der gleiche Effekt ein, wie bei der Verzinsung der Staatsschuld. Staatsämter wären folglich ehrenamtlich zu übernehmen.

Als Fazit ist festzuhalten, dass Staatsverschuldung in der Variante 1 des dargestellten Modells nicht unbedingt notwendig ist. Es kann auch eine Finanzierung der Subventionierung der Arbeiter zur Verwirklichung eines Marktgleichgewichts über eine Besteuerung des Mehrwertes erfolgen.

Nachdem für Variante 1 des obigen Modells die Wirksamkeit der Begrenzung der Staatsverschuldung anhand eines Zahlenbeispiels geprüft wurde, ist dies der Vollständigkeit halber auch für die Modellvariante 2 ($w < 1$) zu tun. Die entsprechenden Werte sind in Tabelle 6 ausgewiesen, um einen Vergleich zwischen absoluter und relativer Entwicklung der Staatsverschuldung zu ermöglichen.

Aus Tabelle 6 ist zu ersehen, dass für die Variante 2 des obigen Modells ($w < 1$, ohne ökonomisches Wachstum, s.u.) die Staatsverschuldung ohne Berechnung der Zinsen bereits nach fünf Wirtschaftsperioden 100 Prozent des Bruttosozialprodukts, des Bruttoinlandsprodukts bzw. des Erlöses beträgt. Auch dieses Beispiel verdeutlicht die Problematik der Festsetzung einer Grenze für die Staatsverschuldung, da bereits nach einer Reihe von wenigen Wirtschaftsperioden diese Grenze erreicht wird und nicht mehr einzuhalten ist. Dabei ist es gleich, ob die Grenze als absoluter oder relativer Wert formuliert wurde. Es wird auch durch die Variante 2 die zweite These gestützt und nicht widerlegt.

Für die Modellvariante 1 wurde ferner geprüft, wann die Zinslast durch die Staatsverschuldung der Höhe des Bruttosozialprodukts, des Bruttoinlandsprodukts bzw. des Erlöses entspricht und der Staat in der folgenden Wirtschaftsperiode zahlungsunfähig wird. Das soll auch für die Modellvariante 2 getan werden. Es wird ebenfalls eine Verzinsung des jährlichen Verschuldungsvolumens von 10 Prozent unterstellt werden. Die entsprechenden Werte sind in Tabelle 7 ausgewiesen.

[2] Die Bibel 1966: 96 (2. Mose 22, 24), 152 (3. Mose 25, 36-37), 236 (5. Mose 23, 20-21), 610 (Psalm 15, 15), 872 (Hesekiel 18, 13, 17); Das Zinsverbot war bis 1983 formell noch im katholischen Kirchenrecht verankert; vgl. Hanke-Wehrle 1997: 288.

Tabelle 6. Entwicklung der Staatsverschuldung für $w < 1$

Wirtschafts-periode	BSP/BIP/Erlös (Y in GE)	∑ Verschuldung (absolut in GE)	Verschuldung (relativ, Anteil an BSP/BIP/Erlös in %)
1. Periode	20	4	20,00
2. Periode	20	8	40,00
3. Periode	20	12	60,00
4. Periode	20	16	80,00
5. Periode	20	20	100,00

Quelle: eigene Darstellung.

Anhand der in Tabelle 7 ausgewiesenen Werte zeigt sich, dass für die gewählten Werte die Zinslast bereits in der neunten Wirtschaftsperiode höher ist als das Bruttosozialprodukt, das Bruttoinlandsprodukt bzw. der Erlös. Ab dieser Wirtschaftsperiode kann der Staat die Zinsen für die Verschuldung nicht mehr aufbringen. Es tritt der Staatsbankrott ein.

Da die modellhafte Berechnung des Zeitpunktes für den Staatsbankrott, wie bereits oben ausgeführt, sehr theoretisch ist, soll auch für die Modellvariante 2 eine realistische Darstellung der Zusammenhänge anhand der gesamtwirtschaftlichen Produktionsfunktion, der gesamtwirtschaftlichen Erlösfunktion und der gesamtwirtschaftlichen Kostenfunktion sowie den entsprechenden oben unterstellten Werten erfolgen. Die Funktionen sind in den Gleichungen (1), (2) und (4) noch einmal dargestellt. In den Gleichungen (8) bis (15) sind die entsprechenden Werte aus dem obigen Modell in der Variante 2 ausgewiesen.

Tabelle 7. Entwicklung der Staatsverschuldung für $w < 1$ (in GE)

Wirtschafts-periode	BSP/ BIP/Erlös	Verschuldung Vorjahr	Neuver-schuldung	Verschuldung	Zinsen
1. Periode	24	0,0	4	4,0	0,4
2. Periode	24	4,4	4	8,4	0,84
3. Periode	24	9,24	4	13,24	1,324
4. Periode	24	14,564	4	18,564	1,8564
5. Periode	24	20,4204	4	24,4204	2,44204
6. Periode	24	26,86244	4	30,86244	3,086244
7. Periode	24	33,948684	4	37,948684	3,7948684
8. Periode	24	41,7435524	4	45,7435524	4,57435524
9. Periode	24	50,31790764	4	54,31790764	5,43179076
10. Periode	24	59,7496984	4	63,7496984	6,37496984

Quelle: eigene Darstellung.

$Y = w\ (AK + KK)$ gesamtwirtschaftliche Produktionsfunktion (1)
$Y = p \times x$ gesamtwirtschaftliche Erlösfunktion (2)
$K(x) = x\ (AK + KK)$ gesamtwirtschaftliche Kostenfunktion (4)
$K(x) = 2\ (6 + 6) \quad K = 24$ (13)
$w = 0{,}83333$ (8)
$Y = 10 \times 2 \quad Y = 20$ (12)
$Y = w \times K(x)$ (10)
$10 \times 2 = 0{,}83333\ [(2\ (6 + 6)]$ (14)
$20 = 1{,}2\ (24)$ (15)

Aus Gleichung (15) erkennt man, dass das Kreditvolumen vier Geldeinheiten (4 GE) bzw. zwei Geldeinheiten pro Produkteinheit (2 GE pro PE) beträgt, welches der Staat aufnehmen muss, um das Unternehmen zu subventionieren, damit es die Arbeiter bezahlen kann. Man erkennt auch, dass der Staat für diesen Kredit keine Zinsen zahlen kann, da er diese von den Subventionen abziehen müsste. Würde der Staat so verfahren, könnte er weniger Subvention auszahlen. Die Konsequenz wäre, dass das Unternehmen zu wenig Geld hätte, um die Arbeiter zu bezahlen. Die Volkswirtschaft würde nicht funktionieren. Es gäbe kein Marktgleichgewicht, sondern in jeder Wirtschaftsperiode einen Lohnüberschuss.

Auch in diesem Fall erscheint das Zinsverbot einleuchtend und praktikabel.

Für die Modellvariante 2 ist die Subventionierung über Staatsverschuldung ebenfalls nur eine Lösung. Alternativ ist die Subventionierung über die Einführung einer Steuer zu finanzieren. In diesem Fall wären die Löhne, die über den Erlös des Unternehmens bzw. den Kauf der hergestellten Produktmenge hinausgehen, durch die Besteuerung des Lohnes bzw. des Einkommens mittels einer Lohn-/Einkommensteuer in Höhe von vier Geldeinheiten (4 GE) bzw. zwei Geldeinheiten pro Produkteinheit (2 GE pro PE) abzuschöpfen und als Subvention an das Unternehmen auszuzahlen. Es zeigt sich auch in diesem Fall, dass die Subvention nicht durch Kosten der Staatsführung bzw. der Steuerverwaltung geschmälert werden darf. Es träte der gleiche Effekt ein, wie bei der Verzinsung der Staatsschuld. Staatsämter wären folglich ehrenamtlich zu übernehmen.

Als Fazit ist festzuhalten, dass Staatsverschuldung auch in der Variante 2 des dargestellten Modells nicht unbedingt notwendig ist. Es kann die Finanzierung der Subventionierung des Unternehmens zur Verwirklichung eines Marktgleichgewichts über eine Besteuerung des Lohns bzw. des Einkommens erfolgen. Die Ergebnisse für die Modellvariante 1 und 2 sind als gleich einzustufen.

6. Staatsverschuldung und Wachstum

Nachdem festgestellt wurde, dass die Staatsverschuldung im Prinzip ein nicht zu bremsender Prozess ist, in dem die Staatsverschuldung ständig ansteigt und

eine Begrenzung nicht wirksam ist, soll geprüft werden, wie These 1 bei ökonomischem Wachstum einzuschätzen ist. In dem oben konstruierten Modell und seinen zwei Varianten wird kein ökonomisches Wachstum unterstellt. Unter ökonomischem Wachstum wird der Anstieg des Bruttosozialprodukts (BSP) bzw. des Bruttoinlandsprodukts (BIP) oder des Erlöses ($Y = E$) von einer Wirtschaftsperiode zur nächsten verstanden. Wachstum zeigte sich beim bisherigen Modellansatz nur bezüglich der Staatsverschuldung.

Die Möglichkeiten ökonomisches Wachstum zu erwirken, ergeben sich aus Gleichung (2). Der Gleichung für das Bruttosozialprodukt, das Bruttoinlandsprodukt bzw. den Erlös:

$$Y = p \times x \tag{2}$$

Gemäß Gleichung (2) kann ökonomisches Wachstum, eine Steigerung von Y, erstens durch eine Steigerung von p, dem Preis des hergestellten Produktes, zweitens durch eine Steigerung von x, der Menge des hergestellten Produkts und drittens durch eine gleichzeitige Steigerung von p und x erfolgen.

In Tabelle 8 ist die Entwicklung der einfach strukturierten Volkswirtschaft für einen Wertschöpfungsfaktor größer eins ($w > 1$) bei ökonomischem Wachstum dargestellt. Das ökonomische Wachstum wird durch ein Preiswachstum erzeugt. Dabei wurden Preissteigerungen unterstellt, die dem Kreditvolumen der Vorperiode entsprechen, so dass man davon ausgehen könnte, dass die Staatsverschuldung durch das Wachstum wieder abgebaut werden kann.

Aus Tabelle 8 und durch einen Vergleich von Tabelle 8 und Tabelle 2 erkennt man, dass die Staatsverschuldung durch Preiswachstum nicht abgebaut werden kann. Im Gegenteil, die Staatsverschuldung steigt noch stärker an, da der Unterschuss bei der Entlohnung durch den Preisanstieg entsprechend wächst und weitere über Staatsverschuldung finanzierte Subventionen notwendig sind, um ein Marktgleichgewicht herzustellen. Ansonsten könnten die Arbeiter die hergestellte Produktmenge nicht kaufen.

Tabelle 8. Entwicklung der einfach strukturierten Volkswirtschaft für $w > 1$ bei ökonomischem Wachstum

Wirtschafts-periode	Produktionsfunktion	Unterschuss bei der Entlohnung	∑ Kreditvolumen
1. Periode	$w = 12 \times 2 / 10 \times 2 = 1{,}2$	4	4
2. Periode	$w = 14 \times 2 / 10 \times 2 = 1{,}4$	8	12
3. Periode	$w = 20 \times 2 / 10 \times 2 = 2{,}0$	20	32
4. Periode	$w = 33 \times 2 / 10 \times 2 = 3{,}3$	46	78
5. Periode	$w = 45 \times 2 / 10 \times 2 = 4{,}5$	70	148

Quelle: eigene Darstellung.

Die beiden anderen Alternativen zur Erzeugung von ökonomischem Wachstum sind nicht praktikabel, da die Produktmenge (x) nicht gesteigert werden kann. Die Nachfrage ist personell begrenzt. Es gibt nur zwei Personen in der Volkswirtschaft, die je eine Produkteinheit kaufen können, wenn sie über die notwendige Geldmenge verfügen können.

In Tabelle 9 ist die Entwicklung der einfach strukturierten Volkswirtschaft für einen Wertschöpfungsfaktor kleiner eins ($w < 1$) bei ökonomischem Wachstum dargestellt. Das ökonomische Wachstum wird auch in diesem Fall durch ein Preiswachstum erzeugt. Es werden Preissteigerungen angenommen, die dem Kreditvolumen der Vorperiode entsprechen, so dass im Prinzip die bestehende Staatsverschuldung getilgt werden könnte.

Aus Tabelle 9 und durch einen Vergleich von Tabelle 9 und Tabelle 3 wird deutlich, dass die Staatsverschuldung durch Preiswachstum nicht abgebaut werden kann. Im Gegenteil, die Staatsverschuldung steigt noch mehr an, da der Unterschuss beim Erlös durch den Preisanstieg entsprechend wächst, bzw. zu einem Überschuss führt, und somit weitere über Staatsverschuldung finanzierte Subventionen notwendig sind, um ein Marktgleichgewicht herzustellen. In der ersten Wirtschaftsperiode muss das Unternehmen subventioniert werden, um die Löhne zahlen zu können. Ab der zweiten Wirtschaftsperiode müssen die Arbeiter subventioniert werden, da sie sonst die hergestellte Produktmenge nicht kaufen könnten.

Tabelle 9. Entwicklung der einfach strukturierten Volkswirtschaft für $w < 1$ bei ökonomischem Wachstum

Wirtschafts-periode	Produktionsfunktion	Unterschuss beim Erlös*	∑ Kreditvolumen
1. Periode	$w = 10 \times 2 / 12 \times 2 = 0{,}83333$	4	4
2. Periode	$w = 14 \times 2 / 12 \times 2 = 1{,}16666$	–4	8
3. Periode	$w = 16 \times 2 / 12 \times 2 = 1{,}3333$	–8	16
4. Periode	$w = 20 \times 2 / 12 \times 2 = 1{,}6666$	–16	32
5. Periode	$w = 28 \times 2 / 12 \times 2 = 2{,}3333$	–32	64

* minus bedeutet Überschuss.

Quelle: eigene Darstellung.

Auch in diesem Fall sind die beiden anderen Alternativen zur Erzeugung von ökonomischem Wachstum nicht praktikabel, da die Produktmenge (x) aufgrund der begrenzten Nachfrage nicht gesteigert werden kann. In der einfach strukturierten Volkswirtschaft leben nur zwei Personen, die je eine Produkteinheit des hergestellten Produktes kaufen können, sofern sie dafür genügend Geld zur Verfügung haben.

Als Ergebnis der Darstellungen zur Entwicklung der einfach strukturierten Volkswirtschaft bei Wachstum ist festzuhalten, dass die Staatsverschuldung auch bei Vorliegen von ökonomischem Wachstum nicht abbaubar ist und weiter ansteigt. Zudem ist ökonomisches Wachstum nur als Preiswachstum möglich. Die beiden anderen Alternativen, das ökonomische Wachstum durch die Steigerung der Produktionsmenge bzw. durch Preis- und Mengenwachstum zu stimulieren, können nur verwirklicht werden, wenn ein Bevölkerungswachstum und/oder eine offene Volkswirtschaft vorliegt. Da ein Bevölkerungswachstum in Deutschland zurzeit nicht besteht und das Modell einer offenen Volkswirtschaft aufgrund des Verstoßes gegen die von den Vereinten Nationen vorgegebene Nachhaltigkeitsanforderung an Entwicklungsprozesse nicht praktikabel ist, sollen diese beiden alternativen Modelle hier nicht verfolgt werden.

7. Staatsverschuldung und Zinspolitik

Die Tabellen 5 und 7 zeigen, dass Staatsverschuldung in Hochzinsphasen bereits nach relativ wenigen Perioden zum Staatsbankrott führt. Es entsteht daher die Frage, ob der Staatsbankrott vermieden werden kann. Die Frage ist durchaus positiv zu beantworten. Ein sinkendes Zinsniveau verlängert die Zeit bis zum Staatsbankrott deutlich. Wenn die Zinsen bis auf „Null“ sinken, kann ein Staatsbankrott vermieden werden, wenn keine Tilgung der Staatsverschuldung gefordert wird. Wenn es in der Nullzinsphase gelingt, die Neuverschuldung auf „Null“ zu senken, kann die Staatsverschuldung sogar begrenzt werden. Ein Abbau der Staatsverschuldung ist möglich, wenn es keine Neuverschuldung gibt und das Zinsniveau unter „Null“ sinkt. Der Negativzins auf Staatspapiere führt dann zum Abbau der Staatsverschuldung.

8. Schlussbemerkungen

Die Ausführungen haben gezeigt, dass für die im Modell dargestellte einfach strukturierte Volkswirtschaft auf der Basis einer monetären gesamtwirtschaftlichen Produktionsfunktion die aufgrund von notwendigen Subventionen zur Herstellung eines Marktgleichgewichts entstehende Staatsverschuldung ständig steigt und nicht wieder abzubauen ist, wenn der Wertschöpfungsfaktor ungleich eins ist ($w \neq 1$). Nur wenn der Wertschöpfungsfaktor gleich eins ist ($w = 1$), kommt die Volkswirtschaft ohne Staatsverschuldung aus und entwickelt sich über viele Wirtschaftsperioden ohne Krisen. Als Folgeeffekt zeigt sich, dass der Staat im Modell nur ehrenamtlich geführt werden kann und keine Aufgaben mit denen Ausgaben verbunden sind übernehmen darf, da die Ausgaben nicht finanziert werden können. Jede Finanzierung des Staates würde das Gleichgewicht zerstören.

Es wurde zudem gezeigt, dass eine Begrenzung der Staatsverschuldung als Prozentsatz des Bruttosozialprodukts oder anderen ökonomischen Größen nicht wirksam ist. Die Grenze ist nicht einzuhalten, da sie bei ständig steigender Staatsverschuldung nach einer bestimmten Anzahl von Wirtschaftsperioden unweigerlich überschritten wird. Die einzig wirksame bzw. praktikable Begrenzung der Staatsverschuldung ist das „alte" Zinsverbot, dass in den Schriften der Weltreligionen bereits vor vielen Jahrhunderten vertreten wurde. Es kann daher die These 3 aufgestellt werden:

These 3: Die einzig praktikabele Begrenzung der Staatsverschuldung ist das Zinsverbot oder das direkte Verbot der Staatsverschuldung.

Zudem kann die These 4 formuliert werden:

These 4: Wenn alle Unternehmen einer Volkswirtschaft im Break-Even-Point operieren, entwickelt sich die Volkswirtschaft ohne Krisen und ohne Staatsverschuldung.

Im Modell konnte gezeigt werden, dass wenn der Wertschöpfungsfaktor gleich eins ist ($w = 1$), die Unternehmen im Break-Even-Point arbeiten, Staatsverschuldung ist in diesem Fall nicht notwendig. Es bedarf dann auch keiner Begrenzung und keines Verbots der Staatsverschuldung. Ein Zinsverbot wäre ebenfalls nicht notwendig.

Ferner konnte gezeigt werden, dass Staatsverschuldung im Modell der einfach strukturierten Volkswirtschaft auch durch ökonomisches Wachstum nicht wieder abbaubar ist, wenn Wachstum über den Anstieg des Preises für das eine hergestellte Produkt stimuliert wird. Diese Aussage gilt, da durch Wachstum die Lücke zwischen Erlösen und Kosten (Entlohnung) immer größer wird. Ökonomisches Wachstum durch den Anstieg der Produktionsmenge wurde nicht untersucht, da ein Bevölkerungswachstum vorliegen müsste. Ein Wachstum der Bevölkerung ist aber zurzeit in Deutschland nicht gegeben. Im Modell einer offenen Volkswirtschaft könnte ein Wachstum der Produktionsmenge realisiert werden. Diese Modellvariante wurde aber auch nicht behandelt, da sie gegen die Nachhaltigkeitsforderung verstößt.

Das Modell der einfach strukturierten Volkswirtschaft basiert auf der Idee einer geschlossenen Volkswirtschaft. Dieses Modell ist adäquat, da bei globaler Betrachtung der ökonomischen Zusammenhänge keine offene Volkswirtschaft existiert. Ein Modell der offenen Volkswirtschaft würde zu Aussagen führen, die nicht die Nachhaltigkeit sichern würden. Die nachhaltige Entwicklung ist aber eine Forderung der Vereinten Nationen, die im Brundtland-Bericht ausgearbeitet [Bundesministerium für Umwelt 1992] und in der Agenda 21 [Hauff 1987: XI, XV, XXII, XXIV, 9f, 41-45, 46-69] festgeschrieben wurde. Die Agenda 21 ist von sehr vielen Mitgliedstaaten der Vereinten Nationen unterschrieben und im nationalen Recht umgesetzt worden. Die Aussagen des Modells einer offenen

Volkswirtschaft bestimmen allerdings die aktuelle Weltwirtschaftslage und die Wirtschaftspolitik der Mehrheit der Staaten der Welt.

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National Debt by alternative Interest Strategies

Abstract. *The national debt is frequently discussed in the economic literature. There are two general positions: (1) the national debt is viewed as an evil, because it is a never ending process and (2) the national debt is necessary, because the state needs it to secure its future. In order to explain the validity of each position a simple model is formulated in this article. The model shows that the national debt becomes a never ending process, when the system efficiency is not equal to one and there is no chance to repay the national debt. Even growth-oriented economic policy is not able to solve this problem. However, the national debt can be successfully managed by means of interest policy. A high level of interest will lead to national bankruptcy relatively quickly. But a decreasing level of interest prolongs the time before national bankruptcy happens. A zero interest level and no obligation to repay the national debt will prevent national bankruptcy. When it is additionally possible to stop incurring new debt, the national debt can be kept in check. A negative interest level of national bonds is an instrument which offers a chance of repaying the national debt.*

Keywords: *national debt, debt management, interest policy, equilibrium, growth policy*

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Application of Models in Financial Management

Abstract. *The basic purpose of using any model is to construct a representation of the real world for purposes of experimentation. Financial models are key tools for decision makers. Financial models can help the user of a model to examine problems and evaluate the impact of changing the model's assumptions. The model allows the modeller to understand and learn relevant financial concepts. In order to be used correctly, a financial model must be adequately designed and consist of three components: data, logic and output. The use of models in practice requires a proper understanding of economic and financial aspects of a given business and its environment. It also requires some discipline in structuring the model.*

Keywords: *financial management, financial models*

1. Basic definitions

A model is a small copy of something to show what will it look like when finished [*English Business Dictionary* 1990: 186]. It is a representation, generally in miniature, which shows the structure or serves as a copy of something [*Webster's Encyclopedic Unabridged* 1989: 920]. It is a small representation or copy of something [*Longman Dictionary of Contemporary English* 1990: 668]. A model is a simplified representation of a real object or situation that facilitates the understanding and manipulation of the real thing [Diacogiannis 1994: 1].

A model of the situation being analysed is a basic tool of management science [*The Software Toolworks* 1992]. A model is a representation – usually simplified

– of reality intended to explain the behaviour of one of its aspects. Often a model is an abstract mathematical formulation of the problem. For example, one may construct a mathematical model that can be used to determine how to blend petroleum crudes to yield different amounts of various fuels so as to maximise the profit derived from the sale of these fuels. This type of model making is known as linear programming or, more generally, mathematical programming. Other well-known techniques include inventory models used to recommend optimum purchase or production quantities under varying conditions of consumer demand; Queueing Theory models that describe waiting-line conditions for randomly arriving people requesting service from a facility (stochastic process); and simulation models that can be used to test the performances of complex interactive systems (e.g., an air-traffic control simulation model) under different operating policies.

2. Types of models

Models can be classified into three categories:

– an iconic model is a physical replica of the real thing; a scale model for a shopping centre or an airport, or an aircraft simulator are examples of iconic models;

– an analogue model is a physical representation of objects or situations but does not look like the real thing; for example, a diagram showing the relationship between the financing decisions and objectives of a firm, profitability charts, and so on are analogue models;

– a mathematical model is a set of symbols and mathematical relationships that represent a real situation; for example, break-even analysis, maximising the earnings per share of a firm, optimising the use of financial resources, and so on can all be represented as mathematical models [Diacogiannis 1994: 1].

A more detailed method of classifying models can be based on their type. There are many different types of models:

- iconic – looks like,
- analogue – behaves like,
- symbolic – representative of,
- mathematical – mathematical representative of,
- descriptive – descriptive of behaviour, relationships, physical characteristics,
- deterministic – behaves in prescribed patterns,
- probabilistic – behaviour only predicts probabilities,
- static – static representation,
- dynamic – changing representation,
- algorithmic – optimised and structured,
- heuristic – trial and error [Asch & Kaye 1990: 12].

N. Hogg identifies four main types of models:

– option evaluation using relative criteria – this sort of model rates previously identified options against each other, for example, if a number of projects have been put forward for central approval by divisional management, a model may be used to rank the proposals and, thus, make a selection;

– option evaluation against absolute criteria – in practice, purely relative evaluation is unlikely as there must also be some absolute measure of "goodness", for example, if all of the projects submitted by divisions have a negative net present value (NPV), it would be undesirable to authorise any of them (an example of a common absolute criterion is a hurdle rate for the internal rate of return);

– option identification – in some cases, the business options may not have been fully identified before modelling begins, in which case, one of the main reasons for using a financial model is to provoke thought about what the options are;

– optimisation – the last type of model is used to analyse one option in greater detail, for example a human resource planning model may be concerned with identifying the minimum staff cost for a given work forecast [Hogg 1994: 3].

Financial modelling is the process by which a firm constructs a financial representation of some, or all, aspects of the firm or given security. The model is usually characterized by performing calculations and makes recommendations based on that information.[1]

The term financial modelling is widely used to describe a spectrum of analytical methods. The common theme of these is the representation of business processes in numerical terms on a computer. Applications of financial modelling vary from the complicated and business-critical, such as corporate planning and acquisition analysis, to the straightforward and routine, such as monthly cash monitoring. Some of the most common applications of financial modelling include:

– assessment of strategic/business options,

– evaluation of financing structures, including merger and acquisition opportunities,

– capital project appraisal,

– forecasting of cash flow, profit or asset base,

– bid evaluation,

– cost reduction planning,

– market planning,

– human resource planning.[2]

G.R. Kaye maintains that a generic structure for the modelling process consists of seven stages:

1. Problem definition.

2. Problem analysis.

[1] www.investopedia.com/terms/f/financialmodeling.asp [access: 9.11.2017].

[2] www.investopedia.com/terms/f/financialmodeling.asp [access: 9.11.2017].

3. Parameter estimation.
4. Specification of the model.
5. Encoding the model.
6. Testing the model.
7. Implementation [Kaye 1994: 96].

G.P. Diacogiannis emphasises the following benefits of the financial model:

– the model allows the modeller to understand and learn the relevant financial concepts;

– the model can help the modeller to examine more problems and evaluate the impact of changing the model's assumptions;

– creating graphs using a spreadsheet offers an impressive way to communicate the results of data and information processing;

– the financial model allows the modeller to quantify, model, understand and evaluate complex financial situations – a task which is impossible to perform without the use of the spreadsheet;

– the financial model allows the modeller to provide an effective and more accurate solution to the problem;

– the financial model can have multiple uses, which allows the modeller to save considerable time in the future when the same model has to be used again;

– building financial models with a spreadsheet helps the modeller to develop skills that are immediately transferable in everyday business situations;

– the financial model helps owners and managers of small businesses to utilise their resources more effectively;

– application of the financial model does not always require expert knowledge of computer science or finance [Diacogiannis 1994: 16-17].

The basic purpose of using any model is to try and construct a representation of the real world for purposes of experimentation. Models, such as financial models that we are concerned with, are known generically as mathematical models because they represent the world through a series of equations. Mathematical models are widely used outside business. For example, in aircraft design, as an alternative to wind tunnel testing, use is increasingly made of hugely complicated models of aerodynamics that are run on super-computers. In a field such as aircraft design, the model means that the effects of changes in designs can be more quickly, effectively and cheaply examined than by other methods [Hogg 1994: 13].

Financial models are used for many different reasons. The most common ones include business valuation, scenario preparation for strategic planning, cost of capital calculations for corporate finance projects, capital budgeting decisions and the allocation of corporate resources. Financial models are also used in the creation of projections and trends for forecasts and in many other applications related to industry comparisons, ratio analysis and common size financial statements.[3]

[3] www.investopedia.co/terms/f/financialmodeling.asp#xzz4wAnf1OwW [access: 9.11.2017].

Most authors treat financial modelling as an important tool of financial analysis (or financial planning) [Brealey & Myers 1991: 707; Pluta 1999: 25-29] that provides important benefits: 1) a model combines financial and non-financial information in a common (that is, financial) format; 2) allows the impact of a change in one variable to be seen on the bottom line and, thus, facilitates the development of multiple scenarios; 3) is thought-provoking – the focus of most business is financial and, as such, seeing a situation represented in financial terms often enables managers to gain a better "feel" than being presented with the same picture in qualitative terms; 4) allowing the financing requirement to be sized, depending on assumptions, such as the timing of capital payments, the rate of revenue build-up and the funding instruments available to the project [Hogg 1994: 13-14].

3. Spreadsheet-based financial modelling process

A spreadsheet is frequently referred to as a personal "modelling" tool because it enables the user to build a "personal" model and carry out the modelling on their own. The user decides on the logic and data during the construction phase of the model. Additionally, the user validates the model by using it and expanding it if necessary. The creation of a spreadsheet-based financial model consists of the following stages:

Initial view of the problem. This stage does not require a clear and concise definition of the problem, because a spreadsheet provides the tools to revise and restructure the model at any time. In some cases, the recommended strategy is to plan the model on a piece of paper.

Constructing an initial model. At this stage, an initial model is built by planning the logical steps in the model and using the necessary numerical data. Here you are developing a process for converting input data to output. The presentation style of the model is tailored to the individual. For example, when developing a model that calculates the net present value of an investment project, one can choose to display all the input data before the solution of the problem. It is a good idea to separate the input data from the main calculation section of your model, where the data is employed for processing.

Testing the initial model. Once the initial construction of the model is completed, the model is tested. Testing involves using the model with different sets of data to determine whether it always produces correct results. If there is an error (or errors), it should be located and then corrected using the spreadsheet tools. Typical errors include misreferenced cells, errors in a formula or function, a missed bracket in a lengthy formula or function. If the model needs restructuring, the worksheet can be altered as necessary. Before moving on to the next stage review the learning achieved up to this point.

Expanding the model. This stage is devoted to the expansion of the model by using more data, modifying one or more of its initial assumptions, or providing a further development. The presentation style of the model is tailored to the needs of the model creator.

Table 1. Advantages and disadvantages of computer models

Advantages of computer models	Disadvantages of computer models
They provide a framework for examining problems. Though they may not always lead to solutions, they could highlight gaps in information.	There is a danger of over-simplification. The model builder may leave out crucial factors for expediency.
The process of building the model contributes significantly to a better understanding of the problem.	Symbolic language, though valuable, has its limitations, and not every relationship can be expressed mathematically.
They allow manipulation of both the rules and the data to test a wide variety of possible outcomes.	Model builders can become so enamoured of their models that they begin to believe that they are better than reality, and the model may become rigid.
They are easier and less expensive than carrying out a full-scale exercise, saving both time and money.	Models produce only predictions of outcome. These might be a simple figure (as in a budget) or a range of results with an indication of the one most likely to occur. Models are never (or extremely rarely) absolutely right, which leads some people to perceive them as inherently inaccurate.

Source: Asch & Kaye 1990: 16-17.

Testing the expanded model. At this stage the expanded model is put to the test. If it needs to be restructured or simplified, the worksheet is adapted as necessary. If there are no errors and the model needs further expansion, the creator reviews the learning achieved up to this point and goes back to Stage 4. If no further modifications are necessary, you have constructed you final version of the model. Review the learning achieved from using the modelling approach [Hogg 1994: 10-11]. In Table 1 there are some advantages and disadvantages of computer models.

4. Approaches to financial modelling

Neil Hogg identifies two basic approaches to financial modelling: Pragmatist's Approach and Theorist's Approach. The characteristics of the so-called Pragmatist's Approach to financial modelling are:

– PC spreadsheet-based – the increased availability of cheap, powerful and easy to operate spreadsheet packages for PCs in the 1980s opened up the possibil-

ity of non-computer people developing and running complicated financial models, and accountants were a key group in taking advantage of this;

– financial statement-driven – financial models are viewed as a tool for producing standard statements of balance sheet, profit and loss and cash flow, possibly together with a number of key performance indicators;

– non-optimising – with this approach, models are not designed to produce one optimal result because of the complexity involved in modelling the necessary relationships;

– deterministic – it is uncommon to find models that explicitly incorporate a range of probabilities for variables such as sales – typically, multiple sensitivity analyses will be conducted to examine the behaviour of the output in different scenarios;

– tautological and not algorithmic assumptions – assumptions entered into this type of model tend to be primarily simple accounting relationships, such as profit = sales – cost, so the model is primarily arithmetic [Hogg 1994: 7-8].

The Pragmatist's Approach keeps the model computationally simple and focuses on carrying out the arithmetic that might previously have taken place on large sheets of analysis paper. The model is, therefore, a means of presenting a body of input data in a commonly understandable format and allowing straightforward manipulation of these results. However, this is not to say that these models cannot be both large and complicated.

This approach is viewed by many as the most suitable role for a financial model. It avoids the necessity to model complicated economic variables and to model uncertainty directly. The process of building the model is seen as a prompt for thought and discussion about the issues facing the business. Less deterministic aspects of the problem will probably be tackled via less analytical means.

The so-called Theorist's Approach brings together the economist's approach to analysis and the simulation approach to financial modelling. The Theorist's financial model may be characterised as follows:

– not confined to PC environments – the analysis traditionally used by economists has often made use of powerful midrange machines using specialist statistical and analytical software and this heritage still has an influence: people following this approach will often use a specialist modelling package, such as FCS, in place of, or in addition to, spreadsheets;

– goal driven – whereas the Pragmatist's Approach focuses on producing traditional financial statements, the Theorist's Approach is directed more at examining the impact of assumptions on a few key variables, which might be profit measures, but might equally be variables such as market share or the height of barriers to entry;

– complicated assumptions – with this approach, more of an attempt is made to achieve optimal solutions, such as the profit maximising price and to ascribe

probability functions to variables in order to take account of chance factors, so the relationships in the model will also be more complicated, resulting from the need to model economic relationships.

The Theorist's Approach, therefore, makes greater use of relationships built into the model itself to give explanatory power to the modelling process, as opposed to using the model more as a prompt, as in the Pragmatist's Approach.

In between the Pragmatists and the Theorists there is clearly a fairly broad spectrum of other possible approaches. Indeed, it is even too sweeping a stereotype to say that accountants are Pragmatists and economists are Theorists – these are merely handy labels for the approaches that are evident in business. In addition to those mentioned already, a third important group of people also becomes involved in financial modelling in business. These are the technical people, such as operational researchers, engineers and scientists. As might be expected, their approach is, in many ways, quite close to the view of the Theorist, as it places greater emphasis on the model and less on the process than that of the Pragmatists. The distinguishing factor between these two approaches lies more in their focus: the theorists focus on economic relationships, the technicians perhaps more on physical relationships, such as machine efficiency and resource usage [Hogg 1994: 8-10].

5. Financial planning and inflation

A financial plan must always be preceded by a decision on how to express future cash flow. There are two possible approaches:

– cash flow expressed in nominal values;
– cash flow expressed in fixed prices (real terms).

In practice, the first approach is preferred. If a prognosis is completely accurate and the financial plan is consistent with its execution, figures shown in profit and loss accounts, balance sheets and cash flow statements will correspond to the actual values. Therefore, prognoses and plans based on nominal values are potentially clearer and more consistent with the reality. This approach also enables automatic adjustment of mutual price relationships and structural movements of costs, according to a projected scenario of inflation in various areas of the economy. Nominal values should also be used in short range planning for utilitarian reasons.

In the case of a high inflation rate and long-term plans, the approach mentioned above has several significant disadvantages (e.g. unavailability of nominal sales figures, costs, profits). Therefore, in particular circumstances, the latter method of expressing cash flow and financial resources becomes more and more popular. It is a simpler approach, enabling a better generalisation of assumptions.

It should be used whenever it is certain that a projected cash flow expressed in nominal values will not increase the effectiveness of the planning process and that fixed prices will not make it difficult to communicate the content and objectives included in a company's financial plan.

Irrespective of the kind of financial planning, i.e. based on nominal or real prices, the effect of inflation should always be taken into account. The opinion that the use of fixed prices prevents calculation problems connected with inflation is completely false. Determining fixed prices (i.e. real, but not unchangeable, used for example to calculate quantitative changes) means calculating real future prices, that is after eliminating the influence of the general inflation. These prices do not have to be and are usually not the same as those at the moment of making a financial plan. Mutual price relationships depend on inflation dynamics, particularly with respect to categories of costs, goods and services. If, for example, labour costs are projected to grow faster than the general inflation rate, the real price of labour will be higher, which should be taken into account while making a financial plan using fixed prices. Prices of other production factors and the company's product prices may grow more slowly than the general inflation rate, which means they will actually fall [Zarzecki 1994: 29-30; Pluta 1996: 149-151].

6. The model's structure

It is very important to consider the actual content of the model itself. All financial models can be thought of as comprising three basic sections:

– data section: various types of input information,

– logic section: relationships within the model that transform input data into the desired output, for example the statement "variable costs = 40 per cent of sales" is a piece of logic,

– output section: the desired end result of the model, such as a cash flow or statement of key performance indicators [Hogg 1994: 8-10, 61-63].

Within each of these sections, there will be one or more subsections, or modules as they are called in Figure 1. For example, the data section can include modules of operating cost, capital cost, sales, price and depreciation data, as well as one or more modules of assumptions covering finance, tax, economic variables and so on. The logic section will contain modules to calculate revenue for financial statements and for key performance ratios.

Typically, emphasis is placed on producing working logic. From the perspective of model building, this is entirely natural as the model is largely determined by its logic. However, from the standpoint of financial analysis, the logic on its own is of little use without sound input data. To use an analogy, if the logic is the engine of the model, the data is the fuel. According to Asch and Kaye, one of the

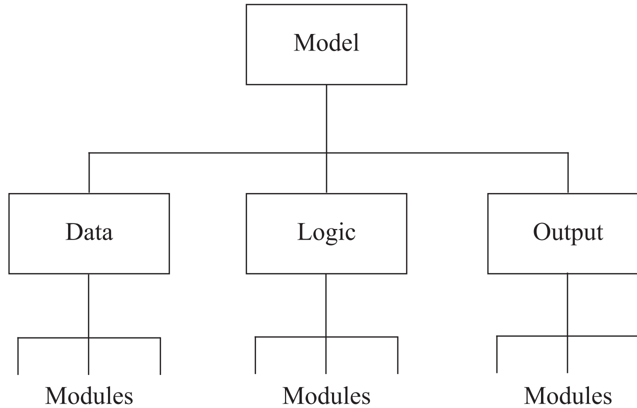

Figure 1. Outline of the model's structure

Source: Hogg 1994: 61.

shortcomings of the modelling process is that it is prone to the "garbage in, garbage out" syndrome [Asch & Kaye 1994: 17].

7. Concluding comments

Most business financial models are simulation models designed to project and analyse consequences of alternative strategies under specified assumptions about the future. Models range from general-purpose ones to models containing a large number of equations and interrelated variables.

Most large businesses have a financial model. Sometimes they use more than one, e.g. a detailed model integrating capital budgeting and operational planning, a simpler model focusing on aggregate impacts of a financing strategy, or a special model for evaluating mergers. Such models are popular for a simple and practical reason. They support the financial planning process by making it easier and cheaper to construct pro forma financial statements. Models automate an important part of planning that used to be boring, time-consuming, and labour-intensive [Brealey & Myers 1991: 707]

On the other hand, it should be emphasised that, as Brealey and Myers put it, "there is no finance in corporate financial models". The first reason is that most such models are based on an accountant's view of the world. They are designed to forecast accounting statements, and their equations naturally embody accounting conventions employed by the firm. Consequently, models do not emphasise the tools of financial analysis: incremental cash flow, present value, market risk, and so on. Second, as Brealey and Myers argue, financial models produce no signposts

pointing toward optimal financial decisions. They do not even tell which alternatives are worth examining. All this is left to their users. Brealey and Myers [1991: 712] maintain that no model can find the best of all financial strategies.

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Zarzecki D., 1994, Planowanie finansowe w organizacjach gospodarczych, *Rachunkowość*, 1, 26-28.

Zastosowanie modeli w zarządzaniu finansami

Streszczenie. *Głównym celem, jaki stawiany jest wszelkim modelom, jest odwzorowanie realnego świata na potrzeby prowadzenia określonych doświadczeń. Modele finansowe są kluczowymi narzędziami wykorzystywanymi przez decydentów. Mogą one pomóc użytkownikowi modelu przetestować różne problemy i ocenić wpływ zmian w założeniach. Modele umożliwiają identyfikację i zrozumienie rozpatrywanych zagadnień ekonomicznych i finansowych. Poprawne zastosowanie modeli finansowych opiera się na właściwie zaprojektowanej strukturze konkretnego modelu, w którym powinny być wyraźnie wydzielone trzy części: dane wejściowe, formuły oraz wyniki. Wykorzystanie modeli w praktyce wymaga dogłębnej wiedzy na temat ekonomicznych i finansowych aspektów danego przedsiębiorstwa, sektora i szerszego otoczenia biznesu, a także dyscypliny w zakresie ustrukturyzowania modelu.*

Słowa kluczowe: *zarządzanie finansami, modele finansowe*

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The Assessment of Investment Fund Classification Using Cluster Analysis

Abstract. *The aim of the article was to verify the research question, whether the fund classification which is based on fund policy, can provide investors with a reliable tool to anticipate return and investment risk of funds. In the research, it was used the cluster analysis. Results of the study show that criteria for grouping funds adopted by the Chamber of Fund and Asset Management (IZFA) (based on the investment policy, ie the structure of assets of fund portfolios) do not fully identify the basic characteristics of funds such as the rate of return and investment risk. This conclusion applies in particular to mixed and equity funds. This is most likely due to the fact that the funds' investment policy criteria defined by the IZFA in their classification of funds were defined in a too flexible way. However, it should be emphasized that the non-compliance of funds from the IZFA classification with the classification based on rates of return and investment risk was characterized by the fact that the selection of a fund with a theoretically higher level of risk and the expected rate of return has in reality, proved to be the choice of a fund with a lower rate of return and lower investment risk.*

Keywords: *classification of investment funds, investment funds' performance*

Introduction

Investors consider different criteria when choosing an investment fund. The literature indicates that the investor's decisions can be influenced by factors such as past rates of return generated by the fund, the variability of the fund's performance or the amount and number of fees. The way funds are advertised can also be important. Regardless of the factors that influence the investor's choices, what

matters most for fund managers is that their clients are satisfied with the choices they make. This will guarantee continued inflows into funds in the future. In order to keep investors satisfied, however, managers have to select appropriate investment profiles that match individual preferences of their clients. It is necessary to provide investors with reliable information about expected risk and return associated with a given fund.

Investment funds are required to meet certain information requirements. Some of the information published by investment funds contains data that can help investors to identify the type of investment policy used. However, the amount of information provided by funds is so overwhelming that it is often very hard to process, especially by less experienced investors.

In order to facilitate investment decisions, particularly for less experienced investors, investment funds are grouped.

One of the most commonly used classifications is the division of funds based on their asset structure proposed by the Chamber of Fund and Asset Management (Izba Zarządzających Funduszami i Aktywami, IZFiA for short). This division is intended to provide investors with clear information about investment risks and expected rates of return. However, the question arises whether the applied methodology of the theoretical division of funds made on the basis of their investment policy adequately reflects their actual performance determined by actual rates of return and the accompanying total risk.

It is also important to determine whether groups of funds distinguished on the basis of their investment policy are homogeneous.

A division of investment funds can only be useful for investors if it differentiates between homogeneous groups of funds based on risk and rates of return.

The purpose of the article is to answer whether the fund classification which is based on the fund's investment policy can provide investors with a reliable tool to anticipate the fund's rate of return and investment risk.

The above question will be answered on the basis of results a study involving cluster analysis, which is used to facilitate objective grouping of funds in terms of rates of return and the investment risk level.

1. Factors determining the choice of investment funds by individual investors

In assessing the quality of a classification of investment funds, it is first necessary to establish the role of this type of division. In other words, it is necessary to determine whether these divisions can significantly influence choices made by investors. To answer this answer one needs to identify factors that influence investment decisions of investors.

Investment fund participants make decisions regarding the selection of funds on the basis of objective and subjective factors. In some cases, these decisions are based on prior analysis of more or less available information about the fund, in other situations, the selection is based on emotions.

There are many factors that can motivate n investor to select a particular investment fund. The most important ones include advertising/marketing, the fund's past performance, investment risk, the type and amount of fees charged by the fund, the type of fund, its investment strategy, the geographic location of the fund's investments, its social responsibility policy, etc.

Results of a study conducted by an American researcher, H. Cronqvist, indicate that one of the determinants of participation in funds is advertising. Advertisements of funds create positive emotions in investors and increase their willingness to choose funds with higher fees and higher investment risk [Cronqvist 2006: 28].

However, it is worth pointing out that although information provided by the media does influence investors' decisions, the priority for investors is to make financial decisions independently [Suyam Praba 2010: 9-10]. According to some studies, the choice of investment funds can also depend on the investor's intelligence and educational and profession background, e.g. highly intelligent investors are less likely to participate in funds with high fees [Grinblatt et al. 2013: 35]. This is particularly true with respect to actively managed funds but also applies to balanced funds. Results of research in this area are not consistent [Wilcox 2003: 645-663; Engström 2007: 1-30]. It is worth pointing out, however, that if investors decide to choose funds with high fees they also expect higher return rates than compared to other funds [Ehm, Müller & Weber 2014: 29].

In addition to being attracted by advertising, or promotions involving reduced fees, some investors care about the fund's investment policy, and want to know whether a fund invests only in securities owned by environmentally responsible entities, or if it invests in companies with high ethical standards, so-called SRI (Socially Responsible Investing or Sustainable and Responsible Investing) [Lulewicz-Sas & Kilon 2014: 344].

In some cases the choice of a fund depends on the investor's geographic preferences and is similar to choosing a fund with high fees. These decisions can usually be attributed to the conviction that funds investing abroad or funds with high fees achieve higher rates of return. Investors *ex-ante* assume that high fees reflect the high quality of management, which must lead to high rates of return. This applies to funds with a diversified management style. Hence, actively managed funds usually charge higher fees, while passive funds charge lower fees.

According to Elton, Gruber and Andre de Souza, both theorists and practitioners recognize that investors do not make good investment decisions [Elton, Gruber & de Souza 2016: 537]. Perhaps this is the result of their over-emotional attitude to the selection of investment funds.

Meanwhile, seemingly subjective decisions of investors are based on their belief that the fund they have selected will generate a high return with a relatively low level of investment risk. Therefore, the selection of funds by investors mainly depends on objective factors. These factors include investor's experience, the fund's investment policy and its past performance. One of the most important determinants of fund performance is investment policy. It reflects managers' decisions about what assets to include in the fund's portfolio and, ultimately, the fund's performance. It is therefore not surprising that from the investor's perspective the most important selection criteria to consider are the fund's performance its persistence [Kang, Lee & Lee 2014: 132]. That is why they are the two main factors that determine what funds investors select.

One may assume that funds are most commonly selected on the basis of their past performance and the accompanying investment risk, that is, the choice mainly is based on the fund's investment policy. In other words, the investor selects a fund that best matches their individual investment profile. However, the practical problem is the sheer number of funds. To facilitate investment decisions, some institutions have taken on the task of preparing classifications of investment funds.

One of such institutions that have developed a classification of investment funds is the European Association of Funds and Asset Management (EFAMA). The classification of developed by this institution is used by virtually all market participants. It divides funds according to their investment policy. According to this classification, funds can be divided into six types:

– equity funds,
– multi-asset funds,
– bond funds,
– money market funds,
– Absolute Return Innovative Strategies (ARIS) funds,
– other funds [EFAMA 2017].

Moreover, this general division of investment fund types is further refined, for example the first four fund types, the universe of equity, bond, multi-assets and money market funds are segmented according to nine criteria: country/region, sector, market capitalization, currency exposure, credit quality, interest rate exposure, emerging market exposure, asset allocation and structural characteristics.

This division of funds is mainly intended to allow comparisons of performance between funds in groups and facilitate quick identification of risk classes and the expected rate of return.

A similar classification has been developed by the Polish Chamber of Funds and Asset Management – IZFA, which divides funds operating in Poland into:

– equity funds,
– mixed funds,
– bond funds,

– cash funds and money market funds,
– real estate funds,
– private equity funds,
– absolute return funds,
– commodity funds,
– securitization funds [IZFA 2017].

In addition, in the Polish classification, some types of funds, such as equity and mixed funds, fall into specialized categories. Moreover, e.g. equity funds are divided into universal funds, index funds, small and medium-sized enterprises' funds, sector funds.

The classification defines what should be included in the fund's investment portfolio so that it can be classified into a given type of fund, e.g. in the case of equity funds, shares and/or other equity securities in the fund's portfolio should make up at least 66%. In our opinion the classification of funds is a way of organising the investment fund market. However, some authors believe that an increase in the number of funds and classifications is a marketing strategy of investment fund companies [Massimo 1998].

Each fund determines its investment policy, which it must strictly adhere to. This defines the categories and share of individual assets that can be included in the fund's investment portfolio.

The fund's investment policy is the basis for classifying it into a given group of funds. Theoretically, using the classification of funds, investors can more easily and reliably choose a fund that matches their investment profile and has an acceptable investment risk, without having to study the structure of its investment portfolio.[1]

Investment fund classification is a valuable source of information for investors who want to rationalize their choice. Moreover, fund classification helps investors to choose funds by allocating individual investment funds to relevant groups with different expected returns and risks.

2. Description of the study

To determine whether the methodology of grouping investment funds based on the structure of their assets adequately reflects the investment profile of funds it is necessary to compare groups of funds. The first group considered in the study was identified on the basis of the investment policy (on the basis of the structure of assets), and the second group was created on the basis of two main characteristics of funds, the rate of return and investment risk.

[1] The investor's investment profile is determined by completing the adequacy test.

A fund classification based on rates of return and total risk (as measured by the standard deviation of return rates) was constructed using the population of all domestic investment funds consistent with the IZFA classification. These were equity funds, mixed funds, bond funds and cash and money market funds. In total, 151 Polish investment funds were included. It was also assumed that the classification would consists of four groups, each containing funds that are most similar in terms of return and risk, as is the case in the traditional classification. The classification was created by applying the k-means grouping method, which is one of the methods of cluster analysis.

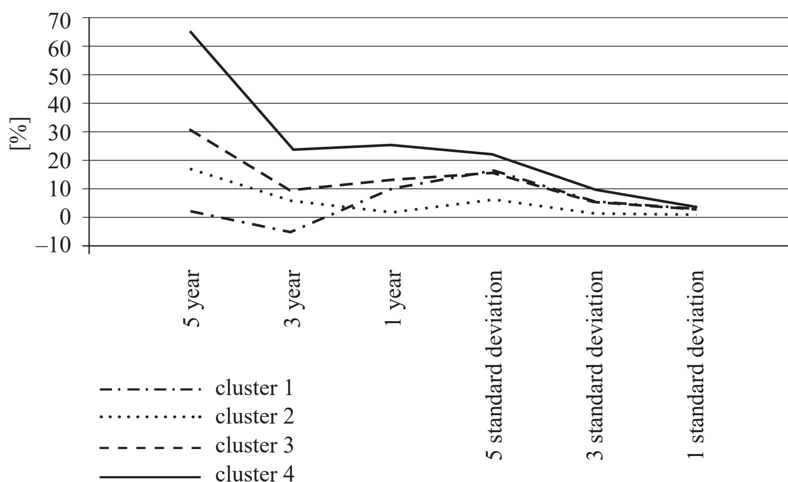
Equity funds with the highest return rates and the highest standard deviation of return rates (total risk) were assigned to the equity fund group. The second group, with slightly lower rates of return and risk, was labelled as the mixed funds group. The third group of funds was termed as the bond funds group. Funds with the lowest risk level (the lowest standard deviation of return rates) and with the lowest return rates were classified into the group of cash and money market funds.

An important problem to be resolved when grouping funds according to past rates of return and risk was to indicate the reference period for these parameters.

The first possibility was to adopt the criteria for grouping simultaneously the rates of return and deviation of rates of return for annual, three-year and five-year periods (Chart 1).

In the case of annual and three-year rates of return and standard deviations, it was not possible to unambiguously assign separate clusters to groups of funds

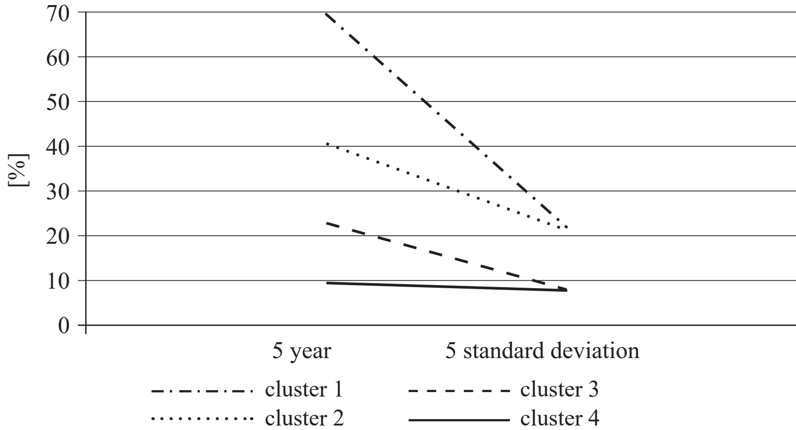
Chart 1. Average annual, three-year and five-year return rates and standard deviations of return rates



Source: own work in Statistica 13.1.

generated on the basis of the structure of assets. Therefore, the rates of return and standard deviations of return rates for five-year periods were used to group funds. The adoption of such grouping criteria has ensured the best fit with the classification based on the structure of assets (Chart 2).

Chart 2. Average five-year return rates and standard deviations of return rates



Source: own work in Statistica 13.1.

In Chart 2 funds are categorized based on five-year rates of return and five--year standard deviations; four groups of funds can be distinguished, ranging from equity funds, represented by the pink line, to cash and money market funds, marked by the blue line. The next step in the study was to compare the classification of funds based on the structure of assets (IZFA) with the classification based on return rates and standard deviations. The data are presented in Table 1.

Table 1. Comparison of two classifications of funds: based on investment policy and based on return rates and total risk

	Classification of funds based on return rates and total risk						
	Type of fund	Equity funds	Mixed funds	Bond funds	Cash funds and money market funds	Total	% of overlap
IZFA Classification	Equity funds	16	17	13	7	**53**	30
	Mixed funds	1	3	18	12	**34**	9
	Bond funds	0	0	30	3	**33**	91
	Cash funds and money market funds	0	0	7	24	**31**	77
	Total	**17**	**20**	**68**	**46**	**151**	48

Source: own work.

As can be seen in Table 1, less than half of the funds classified by asset structure overlap with the division based on return rates and the standard deviation of return rates. In other words, only in half of the cases, investors received return rates and standard deviations that were consistent with the types of funds they had acquired.

The bond funds were the ones where the level of return and risk was actually similar to the expectations associated with the type of fund acquired (91%). The lowest degree of overlap between the classifications based on return rates and standard deviations and what would be expected taking into account the structure of assets was in the mixed fund's group (9%). It should be noted that, in most cases, where the fund was inappropriately classified, its actual investment profile was more conservative (with a lower return and a standard deviation), than would have been attributed to the fund's asset structure.

Conclusions

The above considerations suggest that investment fund classifications can be an important factor influencing investors' choice of funds. The criteria grouping adopted by IZFA (asset structure) do not adequately account for the basic characteristics of funds, such as return and risk. This is particularly true with respect to funds classified as mixed and equity funds. The discrepancy between the expected level of return and risk of funds and their actual performance is most probably due to the fact that the fund's investment policy criteria used to define the structure of assets are very flexible.

One solution to improve the classification of funds based on investment policies using groupings based on actual rates of return and the level of risk consists in limiting the share of individual instruments in the fund's portfolio, or possibly including additional classification criteria. As it is, the commonly used classifications based on the structure of assets are rather poor indicators of the actual level of profit and risk, which may discourage investors from choosing this form of investment.

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Ocena klasyfikacji funduszy inwestycyjnych z wykorzystaniem analizy skupień

Streszczenie. *Celem artykułu była weryfikacja pytania badawczego, czy bazująca na polityce inwestycyjnej funduszy klasyfikacja funduszy może stanowić dla inwestorów wiarygodną wskazówkę pozwalającą antycypować oczekiwaną stopę zwrotu oraz ryzyko inwestycyjne. W badaniu wykorzystano metodę analizy skupień. Na podstawie uzyskanych wyników badania można stwierdzić, że przyjęte przez Izbę Zarządzających Funduszami i Aktywami (IZFA) kryteria grupowania funduszy (bazujące na polityce inwestycyjnej, tj. strukturze aktywów portfeli funduszy) nie w pełni pozwalają na identyfikację podstawowych charakterystyk funduszy jakimi są stopa zwrotu oraz ryzyko. Wniosek ten odnosi się w szczególności do funduszy mieszanych oraz akcyjnych. Wynika to najprawdopodobniej z tego, że kryteria polityki inwestycyjnej funduszy zapisane w klasyfikacji funduszy, definiują strukturę aktywów w zbyt elastyczny sposób. Należy jednak podkreślić, iż niezgodność funduszy z klasyfikacji IZFA z klasyfikacją opartą na stopach zwrotu i ryzyka, charakteryzowała się tym, iż wybór funduszu o teoretycznie wyższym poziomie ryzyka i oczekiwanej stopie zwrotu w rzeczywistości okazał się wyborem funduszu o niższej stopie zwrotu i niższym ryzyku.*

Słowa kluczowe: *klasyfikacja funduszy inwestycyjnych, wyniki funduszy inwestycyjnych*

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