



**University of Finance and Administration**

**Faculty of Economic Studies**

**Department of Finance**

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## PREFACE

The Department of Finance at the University of Finance and Administration (VŠFS) had the honor of hosting the 8<sup>th</sup> VŠFS international conference

**“EU FINANCIAL MARKETS: CURRENT STATE & FUTURE PERSPECTIVES”  
on May 25-26, 2017.**

The conference was held under the auspices of *Ing. Tomáš Nidetzký*, Member of the Bank Board of the Czech National Bank.

The conference was focused on the present state and future development of EU financial markets in the overall context of internationalization and globalization.

The conference tackled some of the key topics viewed from theoretical and practical perspectives: a) Latest trends in the development of the EU financial markets, b) Current regulation of EU financial markets and its impact on the Czech Republic, c) The processes of integration and disintegration in world economy, d) The V4 countries viewed from the perspective of integration and globalization processes, e) Brexit and its potential impact on the financial markets of the EU member states, f) Latest trends in banking and insurance industry in the EU countries, g) Analyses of the EU financial markets' infrastructures. These topics were discussed in 3 blocs on the 1<sup>st</sup> day and in 1 bloc on the 2<sup>nd</sup> day.

On the first conference day, the plenary session was opened by *Assoc. Profesor Petr Budínský*, vice-rector of the University of Finance and Administration. The key note speech was given by *Mr. Bruce Gahir* from the Association of Chartered Certified Accountants on ethical responsibility of accountants on EU capital markets. His introductory presentation was highly appreciated by conference participants and guests.

On the second conference day, the Plenary Session was closed by *Assoc. Professor JUDr. Otakar Schlossberger*, the Director of the Department of Finance of the University of Finance and Administration in Prague.

The conference was held at the premises of the University of Finance and Administration in Prague- Vršovice, Estonska Street 500.

The information on the conference was published on the University of Finance and Administration's web-side in English and in Czech (<http://www.vsfs.cz/financnitry>). Review process included at the first stage blind reviews of abstracts and at the second stage blind reviews of all accepted papers. The Conference Proceedings include 17 selected papers (of the submitted 23 papers). Six papers were rejected.

The conference offered to the 60 conference participants – researchers and policy makers from different countries (mainly from the Czech Republic, Slovakia and Poland) and from different institutions the possibility of scientific discussion and the exchange of knowledge. A greater part of presented papers was dedicated to different research tasks which gave a possibility to interesting international comparisons of the EU countries.

The conference brought many new ideas how to improve pedagogical and research work at our university and the co-operation with experts from the Slovak EUBA, the University of Economics in Katowice and the Czech universities (VŠE, VŠB, BIVŠ).

The next International Conference on Financial Markets organized by the University of Finance and Administration in Prague will take place in the year 2019.

Prague, October 2017.

Vladislav Pavlát a Otakar Schlossberger,  
editors

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## ABSTRAKTY A KLÍČOVÁ SLOVA PŘIJATÝCH ČLÁNKŮ (V ČEŠTINĚ NEBO SLOVENŠTINĚ)

**PETER ÁRENDÁŠ – PATRIK SLOBODNÍK**

DOES THE METALS MARKET FOLLOW THE HALLOWEEN EFFECT PATTERN?

### **Abstrakt**

Niektoré z novších výskumov prišli k záveru, že Halloween efekt sa nevyskytuje iba na akciových, ale aj na komoditných a dlhopisových trhoch. Halloween efekt je kalendárna anomália, prejavujúca sa tým, že výnosy dosahované počas letnej polovice roka (máj - október) majú tendenciu byť výrazne nižšie v porovnaní s výnosmi dosahovanými v zimnej polovici roka (november – apríl). Cieľom tohto príspevku je zistiť, či sa Halloween efekt vyskytuje aj na trhu drahých a priemyselných kovov. Výsledky ukazujú, že Halloween efekt je možné nájsť na trhoch rôznych drahých a priemyselných kovov, hoci štatisticky významný je len v prípade medi, niklu a zinku.

### **Kľúčové slová**

Halloween efekt, kalendárna anomália, abnormálny výnos, drahé kovy, priemyselné kovy

**JOSEF BUDÍK – VLADIMÍR EZR**

THE USE OF RESULTS OF CREDIT RATING AGENCIES

### **Abstrakt**

Text si klade za cieľ ukázať širší záběr ratingových agentur. V souvislosti s finanční krizí zaznívala masivní kritika jejich činnosti a jejich části odpovědnosti za vzniklé problémy. Naopak pozitivní přínos ratingů zmínilo málo autorů. Autor předkládaného textu využívá metodu analýzy veřejně dostupných informací a diskutuje problém pravděpodobnosti úpadku subjektu hodnoceného ratingem. Výsledky analýzy dává do souvislosti s vybranými informacemi týkajícími se kapitálových trhů, konkurenceschopnosti a etiky.

### **Klíčová slova**

hodnocení, hodnocení rozsahu, porovnání

**LUBOMÍR CIVÍN**

LIMITS OF THE GLOBAL ECONOMY FINANCIALIZATION PROCESS

**Abstrakt**

Stat' analyzuje současný stav a perspektivy financionalizace globální ekonomiky a ukazuje na její korelaci s procesem globalizace. Hypertrofický vývoj globálních finančních trhů a růst podílu finančního sektoru ekonomiky ve vyspělých zemích, ale i v zemích s transformující se ekonomikou negativně ovlivňuje jejich reálnou ekonomiku a způsobuje stále větší krizové výkyvy, které hrozí přerůst v globální systemickou finanční krizi. Budoucí vývoj bude významně podmíněn dalším směřováním globalizace, která se v současnosti octla na rozcestí a její další směřování má několik možných scénářů. Financionalizace v tomto kontextu bude mít částečně nezávislý vývoj, daný zejména digitalizací ekonomiky, podstatu problému finanční hypertrofie v rámci ekonomiky bez systémových reforem ovšem nevyřeší.

**Klíčová slova**

globalizace, financionalizace, vztah reálné a finanční ekonomiky

**ANNA CZECH**

ENERGY CRISES IN CONTEMPORARY WORD

**Abstrakt**

V současné době trhy energie trpí různými druhy nestabilit, která může být způsobena různými příčinami. Může být výsledkem politických střetnutí mezi výrobcí energie a majiteli zdrojů nebo zvýšené poptávky po zdrojích energie a přístupu k nim. Důsledkem je zvyšování cen přírodních zdrojů a nejistota nabídky. Cílem příspěvku je vysvětlit příčiny energetických krizí, jejich důsledky a současné oblasti nestability, která ovlivňuje globální trh s energií.

**Klíčová slova**

energetická krize, energetická bezpečnost, energetické zdroje, Evropská Unie

**MICHAELA DOROCÁKOVÁ – PATRIK SLOBODNÍK**

COUNTRY RISK FROM THE PERSPECTIVE OF GOVERNMENT BONDS AND BOND ETFs

**Abstrakt**

Až do obdobia dlhovej krízy, ktorá vyplynula z nadmerného zadlžovania sa v dôsledku nevyhnutnej záchrany finančných inštitúcií a boja proti hospodárskej recesii, boli krajiny považované za spoľahlivých dlžníkov. V súčasnosti štát vo všeobecnosti už viac nevystupuje ako bezrizikový emitent. Tento príspevok sa zameriava na porovnanie rizikovosti vládnych dlhopisov s menej konzervatívnou formou investovania do dlhových cenných papierov ako sú obliagačné ETF, ktoré sú zostrojené tak, aby sledovali výnosnosť vybraného dlhopisového indexu.

### **Kľúčové slová**

riziko krajiny, vládne dlhopisy, burzové fondy, nástroje s pevným výnosom, spready

### **MALGORZATA DZIEMBALA**

CONTRIBUTION OF THE EU COHESION POLICY TO THE COMPETITIVENESS OF REGIONS OF THE V4 COUNTRIES THROUGH PROMOTING INNOVATION AND ENTREPRENEURSHIP

### **Abstrakt**

Konkurenční schopnost regionů ovlivňuje několik faktorů, které závisí také na rozvojové strategii regionu. Podnikatelská činnost a inovace jsou hlavním faktorem pro konkurenční schopnost. Skupina V4 ji podporuje kohezní politikou, neboť konkurenční schopnost je nedostatečná a projevuje se disparitami mezi jednotlivými částmi regionu. Hlavním cílem této stati je vysvětlit úlohu podnikatelů a inovací pro zvyšování regionální konkurenční schopnosti. Stať se zabývá také perspektivou kohezní politiky v letech 2014-20.

### **Kľúčová slova**

podnikání, inovace, kohezní politika EU, regionální politika

### **BOŽENA CHOVANCOVÁ – MICHAELA DOROCÁKOVÁ – VIERA MALACKÁ**

CHANGES IN INDUSTRIAL STRUCTURES AND IMPACT ON STOCK MARKETS

### **Abstrakt**

Predchádzajúce storočie prinieslo prevratné zmeny v oblasti vedy a techniky, ktoré sa premietli aj v zmenách odvetvových štruktúrach jednotlivých ekonomík. Mení sa nielen podiel jednotlivých odvetví na tvorbe hrubého domáceho produktu, ale ešte výraznejšie zmeny sa prejavujú v štruktúre odvetví na akciových trhoch. Najmä na akciových trhoch sa objavujú úplne nové odvetvia, ktoré revolučne ovplyvňujú toky a spracovanie informácií. Dominantné postavenie na trhoch získavajú najmä IT spoločnosti a odvetvie informatiky. Okrem toho sa zväčšuje záujem investorov o investície do akcií bánk a rôznych finančných spoločností. V súčasnosti očakávaný nástup novej etapy priemyselnej revolúcie Industry 4.0 nám signalizuje ďalšie zmeny v odvetvových štruktúrach, ktoré sa budú výrazne podieľať na tvorbe HDP, ale i zmene štruktúry akciových indexov. Zámerom tohto príspevku je analyzovať súčasný stav a postavenie jednotlivých odvetví v štruktúre HDP a akciových indexov a predikovať možné zmeny v týchto indikátoroch.

### **Kľúčové slová**

odvetvová analýza, indikátory odvetvia, odvetvová štruktúra HDP, štruktúra akciových indexov

**VLASTIMIL JANDUS**TELEPHONE COMMUNICATION WITH THE INVESTMENT INTERMEDIARY  
CONTRACTS**Abstrakt**

Příspěvek se zabývá problematikou telefonicky nahrávané komunikace u investičních zprostředkovatelů se zákazníky na finančních trzích. Cílem práce je zjistit, zda právnické osoby s registrací investičního zprostředkovatele působící v České republice na základě udělení povolení od České národní banky informují zákazníky o pořizování zvukového záznamu. Výchozí premisou je, že vázaní zástupci investičního zprostředkovatele o svém záznamu potenciálního zákazníka neinformují. Výzkum byl proveden na základě uskutečnění telefonických rozhovorů s vázanými zástupci zastupujícími předem vybrané investiční zprostředkovatele a prostudováním jejich smluvní dokumentace. Z výzkumu vyplývá, že investiční zprostředkovatelé neinformují své zákazníky o nahrávání telefonických rozhovorů. Pořizování hlasových záznamů a jejich archivování je ošetřeno smluvní dokumentací, a to pouze u služby přijímání a předávání pokynů týkajících se cenných papírů.

**Klíčová slova**

investiční zprostředkovatel, ochrana osobnosti, telefonické nahrávky, cenné papíry, investiční služba, zákazník

**LADISLAVA KNIHOVÁ**CODIFICATION OF PROFESSIONAL TERMINOLOGY WITH FOCUS ON FINANCIAL  
MARKETS**Abstrakt**

Tvorba odborné terminologie pro jakýkoliv vědní obor či oblast lidského konání, její postupné přijímání a finální kodifikace je součástí kultury spisovného jazyka, a to především kultury jeho slovní zásoby. Cílem tohoto příspěvku je upozornit akademickou obec a další odborníky na důležitost odborné terminologie pro rozvoj jakékoliv vědecké disciplíny a identifikovat, analyzovat a vysvětlit roli jak tradičních, tak i nejmodernějších metod používaných v procesu tvorby, postupného přijímání a kodifikace odborné terminologie. Autorka objasňuje charakter vysoce odborné, ale i extrémně fyzicky a mentálně únavné práce lexikografů, která není vždy zcela doceněna. Obzvláště v současném globálním světě není možný rozvoj vědeckých a technologických oborů bez ustálení relevantní odborné terminologie a jejího soustavného zpřesňování s cílem dosáhnout vysoce kvalitní výměny informací mezi vědci a odborníky z různých zemí. Měřeno počtem odborných slovníků publikovaných v českém jazykovém prostředí, je nutné konstatovat, že intenzita prací v oblasti lexikologie a lexikografie v posledních letech poněkud poklesla. S cílem částečně vyplnit tuto mezeru, je tento příspěvek doplněn konkrétními ukázkami kodifikace odborné terminologie týkající se finančních trhů.

**Klíčová slova**

kodifikace, e-slovník, lexikologie, lexikografie, transfer znalostí, odborná terminologie

**EVA KOVÁŘOVÁ**AFRICAN REGIONAL ECONOMIC COMMUNITIES ON THE WAY TO THE CONTINENTAL  
FREE TRADE AREA**Abstrakt**

Příspěvek pojednává o regionální integrační spolupráci v Africe, dosažených úspěších a aktuálních výzvách. V současné době existuje v Africe více regionálních ekonomických společenství (RECs) než v jiném regionu světové ekonomiky. Ačkoliv jsou jejich přínosy limitovány specifiky Afriky, je plánováno, že se stanou základem pro Kontinentální zónu volného obchodu. Ta by měla být představena Africkou unií do konce roku 2017. Cílem tohoto příspěvku je zmapovat statut a perspektivy hlavních RECs (s důrazem na jejich úspěchy v oblasti obchodní integrace), a zhodnotit jejich potenciál pro zformování Kontinentální zóny volného obchodu.

**Klíčová slova**

Afrika, Integrace, Kontinentální zóna volného obchodu, REC, Vnitroregionální obchod

**YVONA LEGIERSKÁ**

TAXATION OF FINANCIAL INSTITUTIONS IN THE CZECH REPUBLIC

**Abstrakt**

Je obecně známo, že finanční instituce vykazují vysokou přidanou hodnotu v rámci jednotlivých odvětví národního hospodářství téměř každé vyspělé země. Mnohé vlády se proto snaží tuto koncentraci bohatství zpomalit, a to zpravidla prostřednictvím odlišného nastavení zdaňování oproti ostatním daňovým subjektům. Dalšími důvody tohoto přístupu je skutečnost, že finanční instituce jsou v řadě zemí vysoce dotovány prostřednictvím podpory státu nejrůznějšími finančními produkty pořizovanými občany. Cílem příspěvku je na základě analýzy a mezinárodní komparace navrhnout změny ve zdanění finančních institucí v České republice.

**Klíčová slova**

finanční instituce, daň z příjmů, daň z přidané hodnoty, daň z finančních transakcí, daň z finančních aktivit

**VLADISLAV PAVLÁT**

THE PATH TO A SCIENTIFIC CONFERENCE: EXPERIENCE FROM VSFS

**Abstrakt**

Cílem příspěvku je charakterizovat mezinárodní konference o finančních trzích a jejich regulaci, uspořádané Vysokou školou finanční a správní v období 2003 – 2017 a formulovat koncepci jejich budoucí podoby future. Cesta od informativně-edukační konference k vědecké mezinárodní konferenci nebyla snadná. Jedinou slibnou budoucí cestou bude zúžení záběru konference a zvýšení požadavků na kvalitu.

### **Klíčová slova**

typy konferencí, vědecké konference, typy vědeckých statí, dopad na vzdělávání a výzkum, kvalita konferencí

### **CTIBOR PILCH**

SOME DEVIATIONS FROM RATIONALITY WHEN INVESTING IN FINANCIAL MARKETS

#### **Abstrakt**

Podľa tradičných finančných teórií všetci účastníci finančných trhov myslia a správajú sa racionálne. Svoje preferencie hneď prispôbia novým informáciám a konajú na základe teórie maximalizácie úžitku. Táto teória je logická, ale zlyháva pri aplikácii do skutočného života. Práve preto sa ako reakcia na nefunkčnosť teórie efektívnych trhov a modelov racionálneho správania v praxi vytvoril nový prístup k vysvetleniu konania účastníkov finančných trhov, a to behaviorálne financie. Teória behaviorálnych financií hovorí o tom, že niektoré finančné otázky a javy dokážeme lepšie popísať a pochopiť vtedy, keď použijeme modely, v ktorých sa subjekty nemusia zákonite správať racionálne. Podľa tejto teórie existuje množstvo odchýlok od racionality. Niektoré sú popísané lepšie, iné menej. Niektoré sú závislé na emóciách, nazývajú sa emočné. Iné, nezávislé na emóciách, sa nazývajú kognitívne.

Dve z nich, jedna z každej uvedenej skupiny, sú analyzované v predloženom príspevku. Ide o odchýlky Tolerancia k riziku a Ukotvenie. Výsledky prieskumu na vzorke 1100 respondentov, ktorý uskutočnil autor príspevku, dokumentujú fakt, že dané odchýlky existujú napriek veku a vzdelaniu.

### **Kľúčové slová**

behaviorálne teórie, racionalita, odchýlky od racionality, tolerancia k riziku, ukotvenie

### **OTAKAR SCHLOSSBERGER**

IMPACT OF PSD II IMPLEMENTATION ON THE PAYMENT SERVICE

#### **Abstrakt**

Dne 12. ledna 2016 vstoupila v platnost směrnice Evropského parlamentu a Rady (EU) 2015/2366 o platebních službách na vnitřním trhu (dále jen Směrnice "PSD II"). Směrnice totiž mimo jiné ukládá finančním institucím, které svým klientům vedou platební účty, aby za určitých podmínek zpřístupnily své systémy a klientská data pro služby třetích stran, pokud o to klient požádá. Tato skutečnost může vést k vytváření nových obchodních modelů a pro finanční instituce to bude znamenat ztrátu určitého monopolního postavení a zvýšenou konkurenci. S transpozicí Směrnice PSD II, která má být v členských státech provedena do 13. 1. 2018, budou poskytovatelům těchto služeb (často technologickým společnostem, označovaných jako "fin-tech") uloženy i nové povinnosti a tito poskytovatelé budou také nově podléhat dohledu národních regulátorů. Cílem tohoto článku je s pomocí metody deskriptivní analýzy poukázat na očekávané možné změny při poskytování platebních služeb podle PSD II a na právní postavení subjektů, které budou chtít po implementaci PSD II poskytovat platební

služby. Příspěvek bude vycházet z hypotézy, že Implementací PSDD II dojde ke zvýšení kvality při poskytování platebních služeb konečným uživatelům.

#### **Klíčová slova**

PSD II, platební služby, platební styk, poskytovatel, správce

### **SYLWIA TALAR**

BARRIERS TO CROSS-BORDER PORTFOLIO CAPITAL FLOWS IN THE DIGITAL ERA

#### **Abstrakt**

Cílem této práce je odpovědět na otázku, jak digitální revoluce ovlivňuje mezinárodní pohyb portfoliového kapitálu. Finanční trh je již nejvíce globalizovanou oblastí světové ekonomiky. Omezení přeshraničních finančních toků jsou nejméně mezi jinými, jako jsou zboží, služby nebo lidé (pracovní síly). Rychlý a vícerozměrný rozvoj informačních a komunikačních technologií přináší neustálé snižování překážek při zpracování a přenosu informací (minimalizace asymetrie informací), automatizace transakčního procesu a právě nový fenomén v kapitálových tocích, jako je vysokofrekvenční obchodování (HFT). Obecně se uznává, že nové ICT odstraňují bariéry času a vzdáleností ve světě. Mohlo by být dokonce interpretováno jako nedostatek překážek pohybu finančního kapitálu. Příspěvek, který zohledňuje nedávný vývoj výzkumu a analýzu hlavních rysů HFT, naznačuje stávající překážky portfoliových kapitálových toků a popisuje jejich měnící se povahu.

#### **Klíčová slova**

investiční portfolio, digitální ekonomika, vysokofrekvenční obchodování, informačních a komunikačních technologií, přeshraniční toky kapitálu bariéry

### **MARTIN VÍCHA**

AUTOMATION IN FINANCIAL ADVICE (ROBO ADVICE) IN REGULATORY CONTEXT

#### **Abstrakt**

Příspěvek se pokouší popsat aktuální tendence ve vývoji bankovníctví a pojišťovnictví v Evropské unii, specificky v oblasti nového fenoménu automatizace při poskytování finančních služeb (tzv. robo advice), s využitím mnoha způsobů, kdy spotřebitelé mohou využívat automatizované nástroje s cílem získat finanční radu, a to zcela bez zásahu nebo s velmi omezeným zásahem člověka. Příspěvek rovněž popisuje možné výhody a rizika spojená s automatizovaným zpracováním ve finančních službách, a to jak pro konečné spotřebitele, tak pro samotné finanční instituce. Příspěvek rovněž diskutuje faktory poptávky a nabídky, které určují motivaci pro využívání automatizovaného zpracování.

#### **Klíčová slova**

automatizace, „robotické“ poradenství, digitalizace, finanční technologie, umělá inteligence

**JAROSLAV VOSTATEK**  
FINANCIAL SECTOR TAXATION

**Abstrakt**

Zdanění finančního sektoru zahrnuje celou škálu problematiky, a to nejen zdanění finančních institucí a finančních služeb, ale i související regulaci jednotlivých finančních trhů. Selhání finančních trhů vyvolalo potřebu komplexního přístupu ke zdanění finančního sektoru, při němž je nutno vzít na zřetel i stávající a možné koncepce daně z příjmů korporací a daně z přidané hodnoty, které jsou či mohou být problémové samy o sobě. A k tomu i problematiku zdanění finančních transakcí, finančních aktivit a bankovní daně. Cílem příspěvku je koncipovat systém racionálního zdanění českého finančního sektoru pro nastávající období, se zohledněním českých specifik a vývoje v EU.

**Klíčová slova**

daň z příjmu právnických osob, daň z přidané hodnoty, daň z finančních transakcí, bankovní daň



## STATI

(zařazené na základě anonymního posouzení dvěma oponenty)

# DOES THE METALS MARKET FOLLOW THE HALLOWEEN EFFECT PATTERN?

PETER ÁRENDÁŠ - PATRIK SLOBODNÍK

### Abstract

Some of the recent researches show that the Halloween effect is present not only on the stock market, but also on the commodity and bond markets. The Halloween effect is a calendar anomaly, when the summer period (May – October) returns of an asset tend to be significantly lower compared to the winter period returns (November – April). The aim of this paper is to investigate, whether the Halloween effect is present also on the industrial and precious metals markets. The results show that the Halloween effect affects various precious and industrial metals, however, it is statistically significant only in the case of copper, nickel and zinc.

### Keywords

Halloween effect, calendar anomaly, abnormal returns, precious metals, industrial metals

### JEL Classification

G01, G14, G15

### Introduction

Calendar anomalies are some periodically repeating patterns in behaviour of financial asset prices, liquidity and volatility. Researchers that studied the financial markets were able to identify various kinds of calendar anomalies. Some of them, e.g. the Holiday effect or the Day of the week effect, are related to particular days, some of them, such as the January effect, are related to particular months. The Halloween effect is based on the differences between the returns recorded over the summer and the winter half of the year. It is based on the observation that the stock market returns tend to do better during the winter months (from November to April) than during the summer months (from May to October).

The financial professionals as well as the academicians pay attention to the market anomalies for several reasons. From an investor's point of view, the calendar anomalies are interesting, as they may be able to generate some abnormal returns, if they are correctly included into an investment strategy. From an academic point of view, the existence of the calendar anomalies on a particular market is in a contradiction to the efficient markets theory. According to Fama (1965), on an efficient market, the stock price reflects all of the important information and it is impossible to record abnormal returns, using fundamental or technical analysis. It means, that if a statistically significant calendar anomaly is present on a stock market, the market can't be considered to be efficient.

Some of the better known authors who focused on various calendar anomalies are Cross (1973) or French (1980) who investigated the Day of the week effect, Lakonishok and Smidt (1988) and Ariel (1990) who investigated the Holiday effect, Ariel (1987) and McConnell and Xu

(2008) who investigated the Turn of the month effect, or Choudry (2001) and Giovanis (2009) who focused on the January effect.

Although the Halloween effect under various names (“Sell in May and go away” or “Sell in May and come back after Halloween”) has been known for several centuries, it got into the centre of attention of many researchers only over the recent decades. Bouman and Jacobsen (2002), Lean (2011), Andrade, Chhaochharia and Fuerst (2013) or Arendas and Chovancova (2016) confirmed the presence of the Halloween effect on stock markets of various countries. As the precious and industrial metals are important for the global economy, many authors study various factors affecting the metals prices. For example Lombardi and Chiara (2012) investigated the linkages between non-energy commodity prices, concluding that the non-energy commodity prices are affected by exchange rates and economic activity. Morales (2012) came to a conclusion that there is a strong relation between precious metals markets and stock markets in terms of volatility spill-overs. Moreover, the negative news tend to affect the precious metals markets stronger than the positive news. Wang, Lin and Li (2013) came to an interesting conclusion that the RICI-M (Rogers International Commodity Index – Metals) commodity index is able to predict the price fluctuations on the stock markets in China, India, Russia, South Korea, Taiwan and Africa. Some of the more recent studies were performed by Figuerola-Ferretti, Gilbert, McCrorie and Roderick (2015), Hammoudeh, Malik and McAleer (2011), Todorova (2015) or Kang, McIver and Yoon (2017).

Although the authors have investigated various aspects of the metals markets, such as the volatility spill-overs, market efficiency, relations with the stock markets, relations with the other commodity markets, the impacts of the economic cycles, etc., there was only a little attention paid to the problematics of calendar anomalies, the Halloween effect included. However, some of the recent studies (Arendas, 2017) show that the Halloween effect can be found also on the commodity markets. The aim of this paper is to help to fill the gap and to investigate the presence of the Halloween effect on the precious and industrial metals markets.

### **1. Data and methodology**

The aim of this paper is to investigate the presence of the Halloween effect on markets of precious and industrial metals. The study includes six industrial and three precious metals, which means nine metals in total. The subgroup of industrial metals includes aluminium, copper, lead, nickel, tin and zinc. The subgroup of precious metals consists of gold, platinum and silver. The price data were provided by the World Bank databases. However, it is important to note that the length of the data series differs metal to metal (Table 1). In the case of copper, lead, tin and zinc, a 50-year time period was investigated and in the case of gold and silver a 48-year time period was investigated. In the case of aluminium, platinum and nickel, it was 44, 43 and 38 years respectively.

**Table 1: Data series – lengths of time periods**

metal	time period	number of years
Aluminium	V. 1972 - IV. 2016	44
Copper	V. 1966 - IV. 2016	50
Lead	V. 1966 - IV. 2016	50
Nickel	V. 1978 - IV. 2016	38
Tin	V. 1966 - IV. 2016	50
Zinc	V. 1966 - IV. 2016	50
Gold	V. 1968 - IV. 2016	48
Platinum	V. 1973 - IV. 2016	43
Silver	V. 1968 - IV. 2016	48

Source: Own processing

If the Halloween effect is present on a market in a particular year, the winter period (November – April) returns must be higher compared to the summer period (May – October) returns. The returns for the summer and winter periods are calculated using following formulas, where  $r_{sx}$  and  $r_{wx}$  stand for summer period and winter period returns, X stands for a particular calendar year,  $P_{Ax}$  stands for April closing price in year X,  $P_{Ox}$  stands for October closing price in year X, and  $P_{Ax+1}$  stands for April closing price in year following year X.

$$r_{sx} = \frac{P_{Ox} - P_{Ax}}{P_{Ax}} \quad (1)$$

$$r_{wx} = \frac{P_{Ax+1} - P_{Ox}}{P_{Ox}} \quad (2)$$

To evaluate, whether the Halloween effect on a particular market is statistically significant, the returns recorded over the summer and winter periods were compared, using the parametric two-sample t-test and the non-parametric Wilcoxon rank sum test. As the two-sample t-test is more robust for normally distributed data series and the Wilcoxon rank sum test should be more appropriate for non-normally distributed data series, the Shapiro-Wilk test was performed in order to determine whether the compared data series were normally or non-normally distributed. To determine whether the compared data series had equal or unequal variances and thence whether the two-sample t-test for equal variances or the two-sample t-test for unequal variances should be used, the F-test was performed.

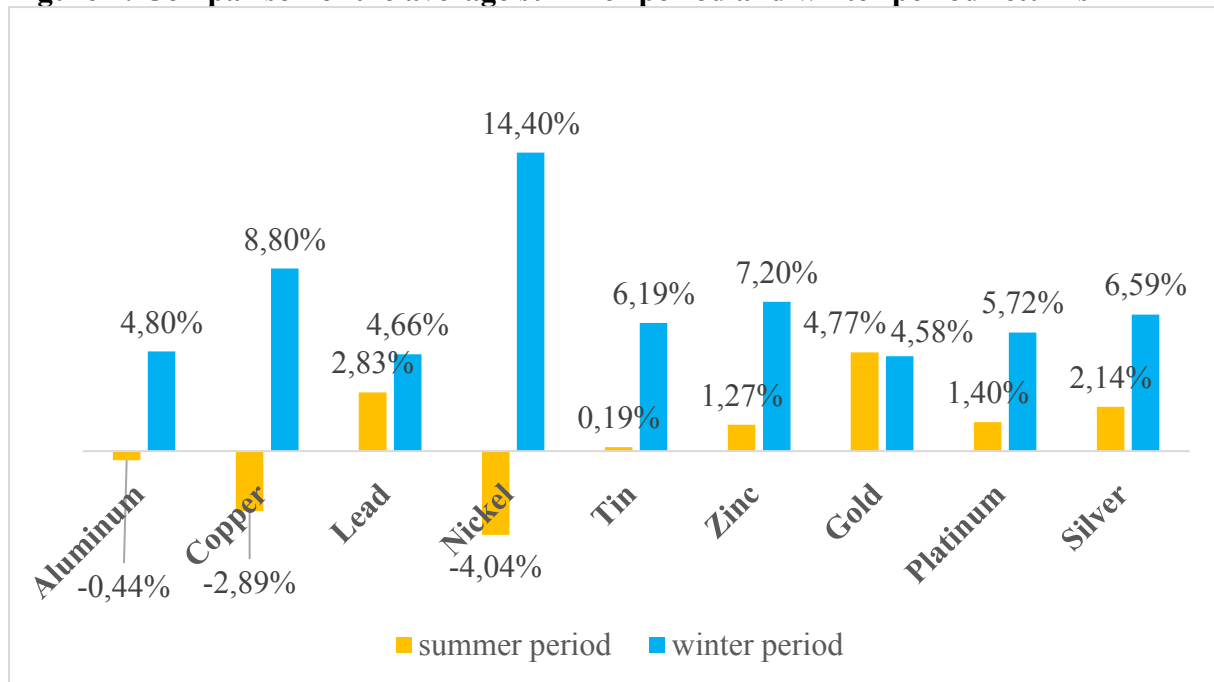
We have also tested two hypotheses:

Hypothesis 1: The metals markets are affected by a statistically significant Halloween effect.

Hypothesis 2: Although not all of the metals markets are impacted by the Halloween effect evenly, the related markets (gold and silver markets; zinc and lead markets) are affected similarly.

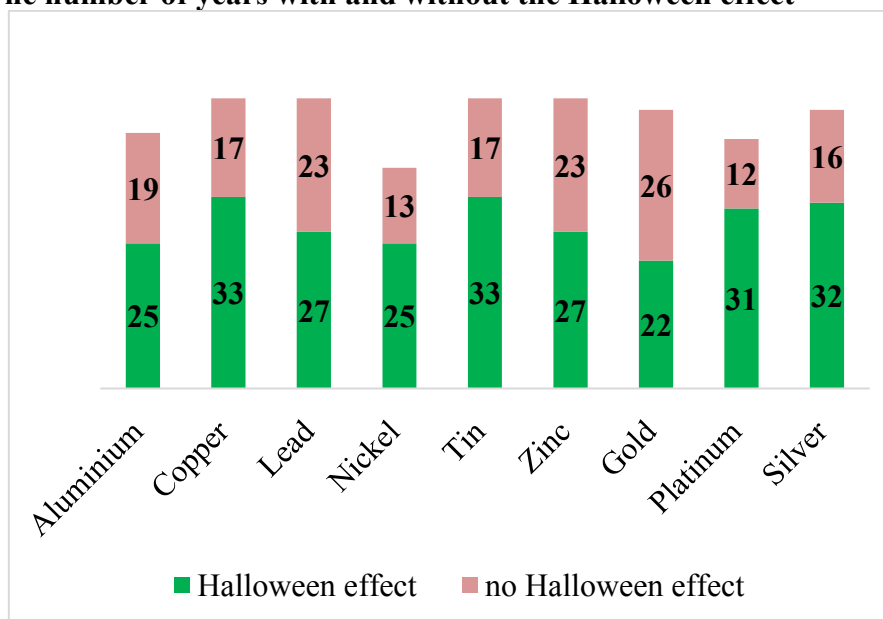
## 2. Results

If the price development of a particular metal is affected by the Halloween effect, its winter period (November – April) returns must be higher compared to its summer period (May – October) returns. The comparison of the average winter period returns and the average summer period returns, over the time periods stated in Table 1, are presented by Figure 1.

**Figure 1: Comparison of the average summer period and winter period returns**

Source: Own processing

As shown by Figure No. 1, in the case of eight out of the nine metals, the average winter period returns were higher than the average summer period returns, over the investigated time periods. Only gold recorded higher average summer period than winter period returns, however, the difference was negligible (4.77% vs. 4.58%). All of the other metals recorded notable differences in favour of the winter half of the year. It is also possible to see, that aluminium, copper and nickel recorded negative average summer period returns and highly positive average winter period returns. The difference is significant especially in the case of copper with average summer period return of -2.89% and average winter period return of 8.8%, and nickel, with average summer period return of -4.04% and average winter period return of 14.4%.

**Figure 2: The number of years with and without the Halloween effect**

Source: Own processing

Figure 2 shows the number of years when the Halloween effect at a particular metal market occurred and the number of years when it didn't. As can be seen, the highest number of Halloween effect years was recorded by the copper and tin markets and the highest number of years without the presence of the Halloween effect was recorded by the lead and zinc markets. The frequency of the Halloween effect occurrence is presented also by Table 2. It shows, that during the investigated time periods, the Halloween effect occurred in more than 50% of years in the case of all of the metals except of gold. The gold market experienced the Halloween effect only in 45.83% of cases (22 out of 48 years). The highest frequency of the Halloween effect occurrence was recorded on the platinum market (72.09% - 31 out of 43 years). Another four metals approached the 66% level: silver (66.67% - 32 out of 48 years), copper (60% - 33 out of 50 years), tin (66% - 33 out of 50 years) and nickel (65.79% - 25 out of 38 years).

Table 2 captures also the differences between the average winter period and average summer period returns. The highest difference was recorded by nickel. The average difference between the winter period and summer period returns climbed up to 18.44 percentage points. A double digit difference (11.69 percentage points) could be seen also in the case of copper. All of the other results ranged between 4.32 and 5.99 percentage points, except of lead and gold that recorded differences of 1.83 percentage points and negative 0.19 percentage points respectively.

**Table 2: Results**

Commodity	% of Halloween Effect Years	Difference (winter period - summer period)	Two Sample t-test	Wilcoxon rank sum test
Aluminium	56.82%	5.24	<b>0.1209</b>	0.0604
Copper	66.00%	11.69	<b>0.0038</b>	<b>0.0049</b>
Lead	54.00%	1.83	0.6610	<b>0.3379</b>
Nickel	65.79%	18.44	<b>0.0218</b>	<b>0.0015</b>
Tin	66.00%	5.99	0.1132	<b>0.1242</b>
Zinc	54.00%	5.93	0.2167	<b>0.0709</b>
Gold	45.83%	-0.19	0.9519	<b>0.9358</b>
Platinum	72.09%	4.32	0.2251	<b>0.1737</b>
Silver	66.67%	4.45	0.3617	<b>0.3445</b>

Source: Own processing

Although the differences between the average winter period and the average summer period returns may indicate quite a lot, they might be skewed by some extreme values. This is why the statistical significance tests are important. Table 2 provides results of the parametric two-sample t-tests and non-parametric Wilcoxon rank sum tests. The Shapiro-Wilk test was used to determine whether the compared data series come from normally distributed populations, which means, whether the parametric or non-parametric test is more suitable. In Table 2, results of the more appropriate test are written in bold. Moreover, the cases of a statistically significant Halloween effect are highlighted.

We can talk about a statistically significant Halloween effect in the case of three out of the nine investigated metals markets. Over the analysed time periods, a statistically significant Halloween effect could be seen only on the copper, nickel and zinc markets. While the calendar anomaly was statistically significant only at the 0.1 level of confidence in the case of the zinc

market, it was statistically significant at the 0.01 level of confidence in the case of the copper and nickel markets.

### **Hypotheses testing**

It is possible to conclude that **Hypothesis 1** (The metals markets are affected by a statistically significant Halloween effect.) can be accepted only partially. Although during the analysed time periods all of the investigated metals markets, except of the gold market, experienced the Halloween effect in more than 50% of years and they recorded notably higher average winter period than average summer period returns, the statistical tests have shown that we can talk about a statistically significant Halloween effect only in the case of the copper and nickel and at a slightly more benevolent significance level also in the case of the zinc market.

While Hypothesis 1 could be partially accepted, **Hypothesis 2** (Although not all of the metals markets are impacted by the Halloween effect evenly, the related markets (gold and silver markets; zinc and lead markets) are affected similarly.) must be rejected. It seemed to be logical to expect that the gold and silver markets and the zinc and lead markets will show some similar behaviour also in regard to the Halloween effect. Gold and silver are the most important precious metals. Their prices tend to move in a tandem. Usually, when the gold price grows, the silver price grows as well and when the gold price falls, the silver price falls as well. The only difference is that silver price tends to move much stronger. A similar relation can be found also between the zinc and lead markets. The reason is that both of the metals are usually mined together, from the same deposit. As a result, both of them are affected by some very similar fundamental factors.

But as the results show, while on the gold market, the Halloween effect occurred only in 45.83% of cases, on the silver market it occurred in 66.67% of cases. Moreover, on the gold market, the average winter period returns tend to be slightly lower compared to the average summer period returns, while on the silver market, the average winter period returns are by 4.45 percentage points higher compared to the average summer period returns. In the case of zinc and lead, the differences are less evident, however, they still exist. The Halloween effect occurred in 54% of cases on both of the markets. But while the zinc market recorded the average winter period returns by 5.93 percentage points higher compared to the average summer period returns, the difference was only 1.83 percentage points in the case of the lead market. Moreover, in the case of the zinc market, the difference between the summer period and the winter period returns was statistically significant at the 0.1 level of significance, while on the lead market, the difference was not statistically significant at all.

### **Conclusion**

The results show that the Halloween effect can be found also on the metals markets. The market prices of 8 out of the 9 analysed precious and industrial metals tend to do notably better during the November – April than during the May – October time periods. The only exception is gold that recorded almost identical average summer period and winter period returns during the investigated time period. The strongest Halloween effect can be found on the nickel and copper markets. The average difference between the winter period and summer period returns is 18.44 percentage points in the case of nickel and 11.69 percentage points in the case of copper. In both of the cases, the differences between the summer period and the winter period returns are statistically significant, even at the 0.01 level of significance. Also in the case of zinc, the differences are statistically significant, however only at the 0.1 significance level. Especially in the case of nickel and copper, the differences are big enough, to be able to generate some abnormal returns, if the Halloween effect is used to build a proper investment strategy.

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# THE USE OF RESULTS OF CREDIT RATING AGENCIES

JOSEF BUDÍK – VLADIMÍR EZR

## Abstract

The text aims to determine the wide range of engagement of credit rating agencies. In the context of the financial crisis, there was massive criticism of their activities and their part of the responsibility for the problems. On the contrary, the positive contribution of credit ratings have a small number of the authors. The authors of the presented text use the method of comparative analysis of publicly available information and discuss the issue of the likelihood of bankruptcy subject to the investigational rating. The results of analysis they associated with selected information from the markets.

## Keywords

rating, rating agency, probability of bankruptcy, bonds

## JEL classification

G 24, D 53, O 17

## Introduction

Investors and politicians have led a broad debate on the global crisis of credit rating agencies in the largest economies in Europe. The three national credit rating agencies assess the risks following their own risk criteria and express them by their own scales. The new Chinese agency Dagong is using the rating symbols in a similar way like Fitch or Standard & Poor's. Credit rating agencies use a slightly different scales for the assessment of corporate risks. The quantification of the risks on the basis of various ratings is fast becoming not entirely trivial.

## 1. Research sources

Rating issues describe in detail the authors Vinš and Fox (2005) (8). Their publication is now more or less a historical document. More recent data in the databases are much more frequent. If you insert the word "Rating" in the database, ProQuest search engine shows 317 394 results in search of the peer-reviewed journals and texts. On the opposite, at the database from the year 1991 there are 671 records only. Increase in records until 2014 is evident from table 1. The database issue rating extremely interested authors. The decrease in the number of records for the year 2015 and 2016 may be regarded as the consequence of delays between the processing of text, his reviews and included in the database.

**Table 1: Number of records in the database (query "Rating")**

Year	Number of records
2014	25671
2013	25344
2012	22940
2011	20124

Source: Author's own processing based on the database ProQuest

One of the problems within the scientific texts is comparison of rating agencies. And Solodkov, Karminsky and Hainsworth (2013) proposed a method for comparison and as a result of creating the tables and charts for comparison and evaluation of the scale used by the various agencies. The bonds rating for a number of investors may be confusing because credit rating agencies have adopted inconsistent definition of grades for different types of securities.

Adelson also studied the non-consistency in many definitions. In fact it is still less clear what means ratings in this area. Some credit rating agencies except relatively often new definitions for their evaluation. Inconsistent definitions for many investors significantly make difficult credit assessment in different types of securities and for different time horizons. In evaluation scales for US municipalities bonds according to Moody's the scales are calibrated for different levels of expected losses other than the scale for all other types of bonds. Inconsistent definitions undermine comparability of the fixed-income investment from various markets (Adelson, 2007).

## **2. Method**

Rating of a country from rating agencies is estimation for the future if such a state will keep its obligations to re-pay the debt. Evaluation has different degrees. About countries with investment degree it is predicted that their commitments will be processed in time, without any reduction of the nominal value. Some of the speculative investment evaluation are bringing more or less the higher risk. The lowest degree is the situation of selective default (the state's insolvency). Such forecasts (positive, neutral or negative) suggest the other necessary future evaluation. The State evaluation is based on the evaluation of other issuers in such a country, their assessment is typically lower.

Moody's global rating scale (like all others) expresses the opinion of experts on the relative credit risk of the companies or single instruments within this state. Long-term ratings are directed to issuers or commitments with an original maturity of one or more years and show us the likelihood of failure. Short-term ratings are assigned to commitments with an original maturity of less than 13 months and also reflect the likelihood of failure.

The question is - how many investors can exactly assign to a specific rating of the issuer's default? Dandapani and Lawrence, as indicated, use the bond rating to measure the probability of the issuer's default. Thus the rating issued by them affects the bond in the market, access to capital and costs (issuer). Moreover, regulators in many states restrict investment funds and institutional investors in securities not to invest without having ratings from at least two main rating agencies. By analogy with the Basel II capital adequacy requirements for bonds may vary according to the evaluation (Dandapani, and Lawrence, 2007)

## **3. Discussion and results**

The rating scales for common use in the Czech Republic are published on the website of the Czech National Bank. Comparative tables show us the somewhat different views of the three main rating agencies. The Czech Republic has rating unchanged Moody's (A1) since the year 2002, Fitch ratings (A +) from the year 2008 and S & P rating (AA) in 2011. Investment grade credit rating is eligible to the Czech Republic by the Moody's and S&P since 1993, by Fitch since 1995. (CNB. 2017).

Rating of countries is but only one of the activities of credit rating agencies. Agencies shall carry out an assessment of market operators. In developed countries, the rating is one of the fundamental regulatory instruments. With pension funds, investment and unit trusts, banks or

insurance companies become (or other regulators) to ensure a certain degree of security of funds - which is invested by these institutions, thus it may reduce the investment risks. Restrictions are often linked to the minimum rating, e.g. the rating of the issuer of securities. Although this system is world-wide known and used abroad, for the public sector in the Czech Republic may be the Chart 2 something new.

**Table 2: Different scales of Moody's**

<b>Product under consideration</b>	<b>The best credit rating</b>	<b>The worst rating</b>	<b>Characteristics of the Moody's best product</b>
Global long-term (commitments of states)	Aaa	C	The commitments Aaa are considered high quality and with a minimum of risk
Global short-term scale	P-1	NP (not prime)	Such assessment as Prime - 1 have the top ability to repay short-term debt obligations
The bond funds rating	Aaa-bf	C-bf	The funds have assets which have been given the highest credit quality.
The equity funds rating	EF-1	EF-2	Has the highest quality in comparison with investment funds with similar investment strategies
The ratings of money markets funds	Aaa-mf	C-mf	A very strong ability to fulfil the double objectives - the provision of liquidity and the capital.
National scale of stock ratings	1	4	Issuer shows the combination of a strong liquidity and sustainability to pay dividends.
The structured products	aaa (sca)	c (sca)	High credit quality and small credit risk

Source: Authors own data processing based on Investor Service Moody's (2016)

If we ask how likely will default the issuer of bonds or other obligations, whose rating was processed, the simple answer of this problem is not easy, in spite of the fact that the credit rating agencies have been studying this issue even for the last decade. According to the study, by Vazza and Kraemer and the likelihood of default for companies with the lowest speculative rating of almost 50 %. The authors of the document in the same analytical study of S&P show, that, on average, there is a negative correlation between the initial rating on the company and its bankruptcy, if it comes to that. For issuers who were initially underpaid in categories "A" and "B", the average time from the rating process to failure was 12, 7 years, respectively 4, 7 years of initial rating (or since 31. 12. 1980, the beginning data of the study). While issuers in the rating category 'CCC' or lower they had the average time to failure only 2-3 years (Vazza, Kraemer, 2014).

**Table 3: The average probability of bankruptcy of up to five years after the S&P**

Rating S&P	The average probability of commitments (default) by five years after S&P rating [%]
AAA	0,36
AA	0,36
A	0,62
BBB	2.15
BB	8,35
B	20,61
CCC/C	47,53

Source: (Vazza, Kraemer, 2014)

Another view to use its credit rating is in the study (Moody's, 2016), the table - return on the investment.

**Table 4: The expected ratio of the repayment of the nominal value**

Basic rating of Moody's	The expected ratio of the repayment of the nominal value of
B1	99 to 100 %
B2	97 to 99 %
B3	95 to 97 %
Caa1	90 to 95 %
Caa2	80 to 90 %
Caa3	65 to 80 %
Ca	35 to 65 %

Source: Moody's Investor Service 2016

The data about average probability of the failure of re-payment of the debts till five years after the rating can be compared with analyses corruption in selected States. Comparison carried out at VŠFS in 2015 shows that with growing corruption the rating is sinking on the scales, and at the same time, the state's competitiveness is dropping.

### Conclusion

Some signals from the capital markets show that credit rating affects markets less than at the beginning of the millennium. After scandals in the USA, more and more people can not accept that a few reviewers in rating companies can influence the market. But for a small investor, or for a company seeking information for their expansion, they may provide the relevant information on the market and, in the case of rating firms can obtain additional information from it's own analysis.

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# LIMITS OF THE GLOBAL ECONOMY FINANCIALIZATION PROCESS

LUBOMÍR CIVÍN

## Abstract

The paper analyzes the current state and perspectives of the global economy financialization and shows its correlation with the globalization process. The hypertrophic development of global financial markets and the growth of the financial sector's share of the economy in advanced countries as well as in transition and emerging markets economies have a negative impact on their real economy and are causing ever-widening crisis fluctuations permanently threatening to overgrow into a global systemic financial crisis. Their real social benefits and importance for serving the real economy are becoming smaller and have declining or even negative implications. Future developments which are now also at the crossroads will be significantly conditioned by the further direction of globalization and its possible future scenarios. But financialization in this context will be partly independent, due to in particular the technical development of the global economy digitalization, but the essence of the problem of financial hypertrophy within the economy will not be solved without systemic reforms.

## Key words

globalization, financialization, relationship of real and financial sector of economy, digitalization

## JEL

F3, F4, F6, G1

## Introduction

The main objective of the paper is to analyze future directions of the financialization process in the current conditions of slowing globalization and to identify alternatives for its next development. An attempt is made to define the problem areas related to the future of this process and to identify the challenges for the theory and economic policy practice in the field of the financial sector regulation at the macro and micro-economic level. The author came out of the following hypotheses: the volume of the financial economy in relation to the real economy is hypertrophic; furthermore, financialization and globalization have lost their momentum in recent years and are looking for ways of future development, with its future being conditioned by the future development of globalization, even though it retains some autonomy on it; and finally, pushing for its positive direction will require some important reforms of the entire financial system at micro and macroeconomic level.

### 1. Methodological bases used to confirm working hypotheses, state of the study of financialization in the literature

Methodologically, it has come out of an author's research using, in particular, procedures enabling the logical decomposition of the object of research, analysis of the current data on processes in the global economy, deduction allowing the estimation of its future development and induction to identify open problems requiring further investigation. The results of the author's own calculations presented in the graphs (No. 1 and No.2) confirm the first hypothesis;

the final theses are the result of a logical deduction from the analysis of historical and current developments by a number of global financial institutions (IMF, SB, BIS, UNCTAD, WTO etc.).

The financialization of the global economy is a relatively new concept in theory, which has been presented in the literature since the last decades of the last century and is very intensively connected with the globalization process. It is defined differently, sometimes as a process that implies the increasing importance of finances, financial motives, financial markets, financial actors and financial institutions in the economy, which leads to a change in the behavior of economic subjects in close connection with the processes of globalization that are relatively autonomous. (Epstein, 2002). Other times, it is presented as a process in which financial markets, financial institutions, and financial elites gain strong influence over economic policy and economic outputs (Palley, 2007).

The process of creating new money ex-nihilo (of nothing) within the fractional reserves global banking system (Jílek, 2013) is extremely stimulating financialization, as the hypertrophic circulation of fiat money is almost completely separated from the fundamentals of the real economy and gains a high degree of autonomy on it, and to which it then reverses to a great extent negatively. Activities related to financialization are referred to be as distributive only (ie ensuring only distribution and redistribution of wealth in the society without increasing its aggregate volume), which is in contrast to creative activities, also named the real economy.

Structural changes in the functioning of capitalism reveal the growing importance of the financial sector, which in the context of financialization replaces the traditional production process. The financial sector of the economy is no longer a tool for a more efficient functioning of the real economy, its activities have increased disproportionately over the last decades. Empirical research carried out on a sample of 87 economies (Tori, Özlem 2017) has shown that there is a certain threshold in the relationship between financing an economy and the economic growth. The correlation between real data has revealed that the level of financialization is beneficial to the economy only to the achievement of a certain threshold, after which the next development of financialization tends to have an unfavorable effect on growth. It follows that more funds in the economy is not necessarily beneficial to economic growth and economic level, and thus to facilitate the growth is essential only achieve "optimal" level of financing of the economy (Law, Singh, 2014). Financialization is one of the sources of increasing saturation of the volume of financial resources into the economy, but these are not sufficiently valued in its real part and are thus re-directed back to their origin, i.e. to financial markets. Similar views have also been made by authors close to the global banking sphere, presented by the Basel BIS. According to them, the financialization is not so bad as it looks, but only if it is not over-expanded (Cecchetti, Kharroubi, 2012).

Finance innovations are an important attribute of financialization process, which has been developed over the last decades both to the breadth and the depth of the global economy and has greatly increased the influence of its actors and institutional leaders within it. The financialization in the context of innovation is determined by two sets of factors, objective and subjective: The first represents the technical development of information and communication, allowing the spread of activities across the globe and the expansion of financial markets on a global scale. This group also includes a largely objective process of expansion of capitalism, ie the internationalization of economic life on a global scale, given by technical, economic and social developments, with the financial sector playing a key role in it, as innovation is one of its driving forces. The latter is linked to the thinking and the political practice of neo-liberalism,

which by the financial sector deregulation has loosen the restrictive rules for this activity and allowed its deep penetration into the overall global economy structure.

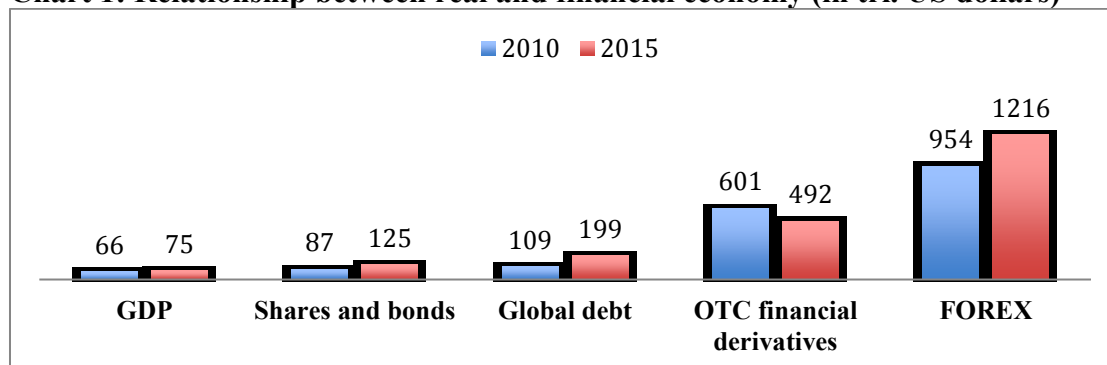
The professional literature identifies causes and sources of excessive financialisation at several levels, namely:

- Existence of a banking system fractional reserves allowing a substantial monetary and credit expansion by both central and commercial banks themselves (Jílek 2013)
- Breakdown of Bretton Woods I in 1971 with its consequences for the emergence of a new monetary arrangement
- Global coordination of the neo-liberal economic policy known as the Washington Consensus (Williamson, 2000)
- Slowdown of the real economy's profitability and capital stampede into the non-productive sphere (Maniatis 2012)
- Processes of hyper-globalization (globalization 3.0) in the world economy (Civin 2017)
- Radical advancement of new technologies in the economy (basically the technical level of globalization)
- The global crisis after 2008, the crisis of the euro area and, as a consequence, also the factor of further deepening of the financialization in the search for the outcomes of the crisis.

## 2. The scope and consequences of financialization

The current state of financialization is indicative of the excessive expansion of money in the global economy (see Chart 1), especially when comparing global GDP, credit expansion and the size of individual financial markets. The structural changes in the global economy as a result of financialization are best demonstrated by the analysis of data showing the degree of disengagement of the original relationship between the real and the financial economy, where the later originally served the first one. By financialization, this relationship turned inwards, leaving the financial economy the dominant position over the real one.

**Chart 1: Relationship between real and financial economy (in trl. US dollars)**



Source: BIS, IMF, author's own calculations

Explanatory notes:

GDP - Worldwide sum of values created per year

Shares and bonds - the volume of traded securities on stock exchanges in a given year

Global debt - the total amount of all outstanding debt claims in the world

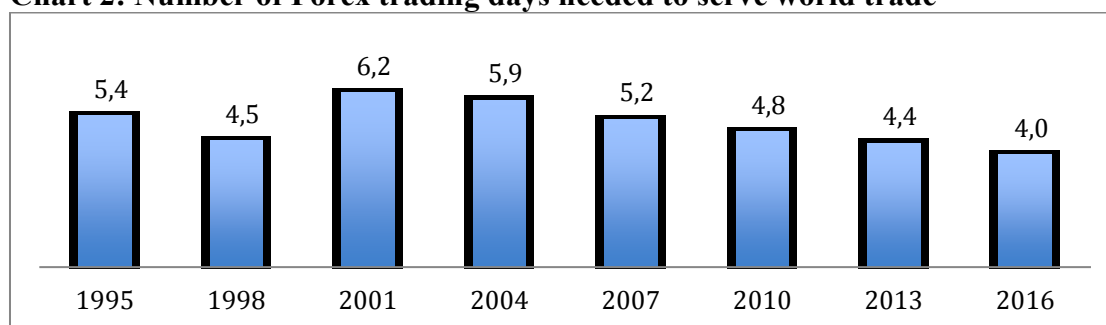
OTC financial derivatives - the nominal value of all outstanding over-the-counter derivative products at the end of the year

FOREX - extrapolation of the total volume of the forex foreign exchange forex transactions



As the result, the movements of the world financial markets are at present an essential determinant of the development of the real economy (eg. Chart 2).

**Chart 2: Number of Forex trading days needed to serve world trade**



Source: Author's own calculations by extrapolation from WTO 2017 and BIS 2016a

The financial bubbles that have been made possible by hypertrophied finances, the inequality of wealth distribution effects they created, along with the sharp rise in indebtedness of all sectors of advanced economies, have in the long run increased aggregate demand and provided stimulus to the anemic growth of the economy during the period of globalization. The bubble burst meant returning to the weak fundamentals of the real economy, a deeply significant period of global stagnation and crisis.

Globalization is a complex, multi-layered and diverse process that takes place at least in four core interconnected spheres: technical, economic, social and political. Its most visible component is the territorial restructuring of economic activities linking the production and markets of different countries through commodity, financial and information flows in a mutually interconnected network of ownership and management of multinationals on a global level. There is also a new international financial system almost completely separated from the real economy with the dominating virtual economy position of financial transactions and speculation - the so-called casino economy (Costello et al., 1989). Hyperglobalization of the 90 'and 00' years, allowed the dynamic growth of financialization, which then acted as its backward multiplier. The process of economic globalization has long been advanced in the financial world, followed later by energy, information and trade flows, and the slowest globalization in the labor market segment.

In the social and political field, globalization and financialization are accompanied by a number of negative phenomena in the form of polarization of society and the deepening of income inequality, the extinction of middle classes, extreme concentration of power in the hands of corporations, the loss of individual power, the rise of religion or the rise of radicalism. In the political sphere, the future ability of national states to pursue control over corporations as a regulator of the last instance becomes the basic problem when corporations have become almost equivalent partners of states. National states' small chances in this regard call for the reinforcement of transnational political integration and inter-state coordination of regulatory frameworks for development. This coordination is an important tool eliminating the worst negative impacts of global economy financialization, as demonstrated by the relatively effective way of global financial sector regulation after the 2008 crisis in the form of Basel III capital treaties, whose application has largely curtailed international transfers of lending and speculative capital (Dobbs, 2015).

The global financial crisis has been a consequence, but also a feedback factor in deepening financialization. But finding outcomes of it under the conditions of hypertrophic financialization opens new issues. One of them is the threat of high inflation generated by the current central bank monetary policy, chosen to respond to the crisis in most developed countries of the world. Under a loose monetary policy, they issued huge amounts of fiat money (see, for example, Yardeni 2017), with the aim of boosting economic growth or eliminating capital losses caused by bubble bursts in the financial markets. It was done mostly by quantitative easing, non-traditional monetary policy operations, or interventions on foreign exchange markets that caused currency wars. As a consequence, a large supply of fiat money circulates in the global economy, moving to the real economy for the purpose of speculation, as well as central bank accounts, where they are gradually released into the economy. This leads to the so-called targeted inflation and it also starts economic growth in advanced countries, accompanied by a slowly growing (in this case desirable and relatively low) inflation. The question remains the ability of the long-term sustainability of such, essentially unnatural economic growth, by using these unconventional instruments of central bank monetary policy.

Targeted inflation may get out-of-control at any time, and the result may be a long-term tendency of its uncontrolled growth. The absence of the ability to use "new" money in the real economy causes again the emergence of different price bubbles in the field of speculative assets traded on financial markets or real estate prices. However, traditional monetary policy instruments that will try to regulate this trend (rising interest rates on central banks) will lead to an increase in the rate and volume of non-performing loans for both asset groups. This creates several forms of threats that allow for a systemic financial crisis not only at the national but also at global level.

However, the high and ever increasing level of debt as the result of the credit expansion is not seen in the household and corporate sectors only, but also in the fiscal sphere. The resolution of the crisis after 2008 by state budgets lead to the indebtedness growth of a number of large economies, but in essence, it was just the debt restructuring (or partial depreciation) and no material conditions were devised to address the consequences of the crisis in the real economy. Loose fiscal and monetary policy used to calm financial markets increased volumes of money directed to financial markets, swapping in terms of interest rates or maturity dates, and speculation, but did not significantly reduce the indebtedness of a number of states, rather the opposite.

### **3. Perspectives of the further development of global economy financialization and its impact on the financial markets functioning**

Financialization, like globalization, in the aftermath of the 2008 crisis was at a certain crossroads when deciding on its further direction. Since both processes have some common characteristics, including multilayer and contradictions between its individual components, it is possible to search their further direction in resolving relationships between their layers. These include, in particular, the ratio between internal (domestic) and external (international) financialization of individual economies, as this also has a significant (perhaps still dominant) dimension within the national economies, which differs from the process of globalization. It is also the relationship between its technical, economic and social aspects, the ratio between the depth and breadth of financialization, as well as the relationship between the real economy and the autonomy of the financial economy. These relations and their mutual relations development will determine a further orientation of the process.

Its internal structure leads to the conclusion that some linear development can not be expected, but often a conflict of contradictory tendencies that will bring partly some positive benefits and some negative elements for the development of the global economy. These tendencies will again be influenced by two groups of factors: the objective development of social processes, given in particular by the direction of global economic and above all technical development, and subjective influences, i.e. interventions of subjects from the political sphere, trying to modify these processes in accordance with interests of the power elites.

Perhaps one of the most important objective factors will be the next development of globalization. (Laudicina, Peterson, 2016). As has already been said, this process is currently at a certain crossroad where it decides on its next direction. The most common are two basic alternatives, namely the continuation of the previous trends of globalization following the previous stage of the so-called hyper-globalization (or globalization 3.0) and its further development into the next, higher stage of globalization 4.0 (following the new phase of the Industry 4.0). (Civin 2017). An alternative is an opposite process, indicated by current tendencies called as deglobalization. Even this process can not be considered linear, the reality of current developments shows some of its possible variants, which are to some extent promoted by global developments - one is increasing protectionism leading up to a certain degree of autarkisation of economies that are currently experiencing a strong response among citizens and some political movements in a number of countries. Another alternative may be the continuation of the modified form of globalization on the basis of the creation of a new multipolar regional structure of the global economy (with the dynamic emergence of China or other countries) where its poles will develop towards intense interconnection primarily on a regional basis within the old regions (EU, North America) accompanied by expansion in regions with new centers of economic development and their satellites in Asia, Latin America and Africa.

Also, the more radical changes brought about by this new stage of the industrial revolution, which could trigger even more fundamental changes in the model of socio-economic development (Laudicina, Peterson, 2016), such as the transition to a shared economy and inclusive growth based on alternative ways of economic and social development, and the distribution of its results like: sustainable development, guaranteed unconditional income, the promotion of fair trade principles into the practice of international trade, etc. It can bring also a focus on reforming the international monetary and global financial system, decentralizing energy distribution infrastructure systems, reducing the volume of global value added chains, returning to food self-sufficiency at a regional level, etc. However, the implementation of this alternatives can be expected to be a slow long-term development focusing on gradual evolutionary changes of the current system, or as a way out of deep structural crises or even extensive systemic collapse that can occur in the global economy (eg, Civin, 2017).

The processes of digitization and its consequences will be important for the further direction of globalization and financialization at the microeconomic level. Their dynamics will lead to the expansion of innovation in the financial sector as well as the implementation of fundamentally new business models (such as digitization, robotics, artificial intelligence, the internet of things, etc.). The current strategic technological innovation in this sector linked to digitization, which will largely determine its further functioning at a global level, can in particular be seen as an increase in the systems of so-called real-time payments, distributed accounting books, the integration of fintech and telecom corporations into the financial system, but also the big data mining that financial institutions have, etc. These tendencies, however, will not only lead to the development of the financial system, but may potentially disrupt existing models of its

functioning so far, not only in developed countries but also in a number of developing and emerging countries (Wyman, 2015).

Other impacts include the expected decline in the profitability of various financial instruments, which will influence the orientation of capital flows in the area of financial investment. Factors that have led to a high return on financial investment over the past thirty years have weakened and even reversed, which may lead to changes in investor behavior and a decline in interest in this type of investment. (McKinsey Global Institute, 2016).

An important determinant of the further direction of financialization will be the social question, namely, the unequal distribution of wealth in the world, both in the international and national contexts. In terms of changes in the financial sector, two new concepts of the operation and management of financial corporations and banks can be expected. One, basically representing the continuation of classical management aimed at maximizing shareholder value, but with the transition from a focus on short-term goals to the long-term ones and so-called sustainable value of the firm. The second will be to move away from this narrowly targeted ownership strategy to the stakeholders value, i.e. the benefit to all stakeholders involved in the business of corporations, not just owners, and top management, but also employees and clients of banks and a substantially wider, all-society external environment.

The next direction of macroeconomic financialization will be determined by the reform of the international monetary system associated with the modification of the functioning of the monetary systems within the economies, which is associated with the further functioning of the system of fractional reserves banking or the search for its replacement, eliminating its serious shortcomings as the financial sector hypertrophy, the huge growth of speculative trading on world financial markets and so on. It also applies to the solution of traditional topics of monetary theory, such as gold remonetization, or its substitution through the use of basket currencies, the introduction of cryptocurrencies, the creation of a single global currency, the regionalization of international monetary systems or other alternatives to the current system. These reforms should bring a reduction in the volatility of financial markets, the consolidation and stabilization of global monetary relations, and the elimination of their existing asymmetry based on the exclusive status of some national currencies.

Future developments of financialization at the macroeconomic level will be influenced by the choice of fiscal policies in countries that obviously require major changes and where contradictory trends can also be expected. On the one hand, the continuation of the unsustainable model of government indebtedness, typical of the development of the public finances of most of the advanced economies. This trend suggests, for example, approaches by the new US administration aimed at tax reform, increasing arms spending, deregulation of the financial sector of the economy, etc.

On the other hand, efforts are under way to move towards sustainable public finances (public budgets prudence and sustainability), focusing on different paths of reducing deficits and total debt to public finances (eg combating tax evasion and tax avoidance, banning banking secrecy and increasing transparency of the banking sector, separating the financial sector from public finances and creating their autonomy in case of market failures or systemic crises as a result of macro-prudential approaches in regulation and supervision), which would also lead to a decrease in trading volumes of various sovereign debt instruments. From the perspective of other policies that may be expected in the future, efforts can be made to curb excessive financialization, coupled with modifications of fiscal and monetary policies of states and central

banks, efforts to regulate excessive monetary and credit expansion, promote financial sector autonomy on public budgets in cases of failure.

### **Conclusions**

Looking at the future of financialization in the context of the further development of the global economy, its partly independent development can be expected from the wider process of globalization. It will be due to in particular the technological development of the digital economy and its broad application in the financial services sector in the near future. The essence of the problem of financial hypertrophy in the global economy, however, does not solve technical and technological innovation itself. Its solution will require more fundamental socio-economic reforms of the entire financial system, which have been outlined above. This outline of the future prospects for financialization shows a number of open issues requiring theoretical finalization and, in particular, subsequent enforcement into the economic and political practice associated with financial sector regulation, which is often internally opposed by conflicting interests of its actors. This is especially about finding and verifying the theses of:

1. The development of new microeconomic financial sector regulation tools allowing for the positive benefits of innovation associated with accelerated digitization and the handling of globalization 4.0, while limiting the possibility of emerging yet unpredictable systemic crisis of a new type.
2. The necessity of limiting the hypertrophy of the financial intermediation sector and its autonomy from the real economy with the aim of its return to its primary service and the mobilization of financial resources by diverting from speculative motives and goals in favor of the material solution of the necessary structural problems of economies at national and global level.
3. Finding alternative monetary policy options and instruments demonstrating more effective results than traditional ones, whose opportunities have proved to be ineffective in the post-crisis period by restoring sustainable development and adequate restructuring of economies.
4. Addressing the issue of the current international monetary system asymmetry, based on the dominance of some fiat national or international currencies, and developing a strategy for its transformation, in line with the new expected ways of globalization and financialization associated to it.

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# ENERGY CRISES IN CONTEMPORARY WORD

ANNA CZECH

## Abstract

Under the conditions of contemporary world economy uninterrupted supply of energy has become the most important criterion for the proper functioning of any economy. Currently energy markets are experiencing many kinds of instability, which disturb conditions of harmonious economic development of countries that are dependent on imported energy. This instability may result from various reasons: it may be a result of political games played by energy producers and resource owners or a result of an increase in demand for natural resources and global competition in access to them. All this is reflected mostly in higher prices of natural resources and increasing uncertainty of supply. The aim of this paper is therefore to present the reasons of energy crises, their consequences and the contemporary areas of instability that have an impact on global energy market.

## Keywords

energy crises, energy security, energy resources, European Union

## JEL Classification

Q40; Q41; Q43

## Introduction

Contemporary global economy, as well as before the national economy, is prone to crises, both the origin of endo- and exogenous with respect to the process of management. Downturn, such as those that took place in 2008-2010, appear unexpectedly, despite extensive analytical apparatus observers of the global economy, and the depth and extent of sometimes overwhelm the effectiveness of the remedies held, where it appears the difficulty in preventing them. Modern crises can be global or partial, or for only certain areas, such as the oil crisis of the early 70s, but can also be limited to a particular country or region, becoming a local crisis. All crises have, however, consistently negative effects and are destructive to the subject area, and its related areas. In describing the crisis are used various synonyms, such as disorder, instability, collapse, threat, fall, destruction, conflict, catastrophe or disaster. All these terms have a pejorative connotation, but at the same time do not talk about what happens next - whether the crisis can be overcome quickly or how far-reaching the consequences will be. The crisis is therefore first and foremost condition of increasing instability, uncertainty and the presence of elements of social tension that can lead to uncontrolled by the course of events. It usually results from a certain event or events that increase the impact of destabilizing the balance of power in the community, shortages (including eg energy) and difficulties in the normal development of the economy. No definition of a crisis does not give ready-made tools that could prevent the development of such a situation, only a conceptual connection with each separate event, which probably led to a situation, it may in the future serve as a basis for preventive measures. The purpose of this article is to highlight the sources of energy crises, their consequences and the modern areas of instability that have an impact on the global energy market.

### **Sources and consequences energy crisis**

The economy of the modern state requires energy for normal development. Therefore, any instability resulting from a breakdown of the process of acquiring, processing and supply of electricity means the possibility of the emergence of the energy crisis, which probably will be severely felt by the economy and the population. In other words, this is a situation where the demand for energy exceeds the capabilities of their delivery. It does not necessarily relate to the same time a number of economies, lack of energy can handle only certain regions and / or countries, while others will not feel lack of energy. Moreover, this kind of crisis can be associated with a deficiency of only one of the energy, as it was already mentioned during the oil crises, also referred to as energy crises. Can therefore be noted that energy deficiency is seen as a crisis in the broad aspect, the absence of adequate amounts of energy in relation to the demand turns into a barrier to economic growth. That barrier may relate to the economic aspect, which involves, for example, the price of energy and the terms of payment, the technical aspect, including the lack of proper infrastructure and the wrong state transmission facilities to the political aspect, related to the use by external energy supplier status to political pressure, and finally to the environmental aspect of promoting the production of energy from environmentally friendly media, on the other hand, imposing restrictions on the media causing the emission of harmful substances into the environment.<sup>1</sup> In addition, the energy crisis is primarily connected with what is happening around sourcing, manufacturing and supply. Thus, it becomes the main source of political action, and to a lesser extent, economic activities, as it did in the 70s and just as it does today. States rich in energy resources may tend to blackmail recipients prices, terms of payment and supply stability, and may also require concessions of a religious, ideological or political. It all makes energy security becomes a major concern not only for a specific state, but takes on an international dimension.

Energy crises usually have so serious economic consequences, if only because of the increase in energy prices. The increase is due firstly to the fact that energy resources, particularly oil and natural gas, are becoming scarce (due to increased global demand for them) and thus more expensive. Secondly, the increase in prices is also a result of dwindling reserves and, consequently, the search for new, often difficult operationally, resources, with the expenditure on the necessary investments to build new connections. Thirdly, the increase in prices of raw materials and energy in general is also generated by environmental regulations (mainly in the European Union), which are related to the effects of external sourcing of primary energy and its impact on the environment. And fourth, the impact on the price of fiscal measures are also countries that increasingly are aware that energy is good for everyday use and, therefore, require it and / or final products tax burden. Thus, rising energy prices and cause an increase in energy prices of other goods and services, which in turn leads to an increase in production costs and, consequently, to inhibit or weaken economic growth and social discontent. The most negative dimension of this situation feel underdeveloped countries and those that do not have their own raw materials. Rising energy prices pose to these countries a significant barrier for economic growth. Of course, this barrier occurs generally when the actual price increase is sudden and significant in relation to the preceding period. For example, an increase in oil prices of USD 65 per barrel to \$ 78 (i.e. 20%) for four months in 2006 led to the resignation of the implementation

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<sup>1</sup> Por. W. Szymański, *Niepewność i niestabilność gospodarcza – gwałtowny wzrost i co dalej?* Difin, Warszawa 2011, s. 156-157.



of a number of contracts.<sup>2</sup> Even in countries with a high level of development of higher energy prices leads to a slowdown in economic growth. The consequence of high prices is to reduce the demand for the raw material, which in turn leads to lower prices, but also to reduce the production and supply of or deterioration of living standards (eg resignation from the use of the car or to reduce home heating costs). Thus, although the reduction in demand for energy due to the increase in prices is part of the return to equilibrium of the market mechanism, and thus leads to mitigate the energy crisis from the point of view of societies and their economies, the situation is very negative about the consequences.

Also for exporting energy and for countries with energy resources to reduce demand for energy as a result of higher prices in the long term can mean a reduction in economic benefits. On one hand, the energy crisis will be seen by these countries as a source of benefit and development, for example as a result of the growing importance of the country's political and higher proceeds from the sale. On the other hand, this situation could turn against him. First, the importers may restrict the purchase of raw materials due to decreased demand or promote other energy sources, and secondly, the economy exporting countries can maintain their dual nature is often understood as the co-existence of well-developed export sector, focused on selling poorly or not at all processed resources and underdeveloped domestic sector, entangled in income inequality and social. As these countries rarely engage the raised capital in modernizing the economy and the creation of modern market institutions, it does not develop its own production relying heavily on imports of necessary goods and services. Funds allocated for the purchase of these products end up in the final analysis, the importing countries primary energy, which as a result of rising energy prices increase the prices of final goods. In this sense, the costs of the exporting countries' economies will continue to grow.

Rising energy prices result in a changed market situation. So far, the operation uneconomic deposits become profitable by lowering the threshold of profitability of their production. Thus, on the market there are new suppliers who increase competition in the energy market. There are also cost-effective renewable energy sources, which have so far not been developed on a large scale. Such actions cause so that the energy crisis will eventually be dismissed. Paradoxically, this does not mean, however, that the price of energy will decrease due to finding new sources of energy. The impact on this situation will technologies of energy production from these sources, which are very expensive. Furthermore, changes in the structure of energy production such as the configuration in which the main source of primary energy is coal, the one in which the energy is to be obtained from renewable energy sources and nuclear power plants, is associated with high costs which will be shifted to the final consumers. High costs are associated, in this case also the development of new energy technologies. Resolve the energy crisis should therefore not be seen solely through the prism of the return of low prices, but also to adapt the economy to a new level of energy costs. Hence the task of the state is the use of such instruments of energy policy to promote long-term energy efficiency of the economy that is less sensitive to fluctuations in the price of traditional energy sources, and will be largely self-sufficient.

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<sup>2</sup> K. Kuciński, wyd. cyt., s. 29.

### **Contemporary sources of uncertainty affecting the global energy market**

Today, the vast complexity of the political and economic processes is fertile ground for the emergence of newer and newer and more complex areas of instability. J. Chevalier lists four main sources of these uncertainties with a crucial impact on the global energy market, and they are: climate change, economic issues, institutional and geopolitical uncertainty.

Climate issues are related to the emission of harmful substances, in particular CO<sup>2</sup> from burning fossil fuels. Most carbon dioxide is produced by burning coal, which is why the EU countries seek to reduce its energy production. Thus, climate change indirectly cause pressure on the governments of many countries to increase energy efficiency and reduce harmful emissions by developing renewable energy sources. Such a policy has mainly the European Union, which not only requires its members adaptation, but seeks to encourage the governments of third countries to take similar initiatives threatening in extreme cases, certain economic sanctions. In the case of Poland, whose economy is based in the predominantly carbon, adapt to environmental laws (so-called climate and energy package) poses a clear threat to energy instability. The reason for this is primarily a concern about the increase in energy prices, as the production of energy from renewable sources is associated with high costs of investment, as well as Poland does not have such as the Scandinavian countries geographical conditions conducive to attracting clean energy from rivers. Changes in the structure of energy production connected with long-term process of adjustment and high cost, however, is probably essential from the political point of view.

Economic issues are primarily associated with the development of new energy technologies, and the price of energy commodities that determine the de facto development potential of the country. It is the access to raw materials and their price depends on the correct and uninterrupted growth of any economy. The crisis in 2008–2009 caused a lot of turmoil in the price of oil: it achieved in 2008, a record high of \$ 147 per barrel. After a deep, though brief correction, the oil price dropped to \$ 50 per barrel, prices have begun to rise again, to maintain the current level of around \$ 120 per barrel. Such large fluctuations in the price of key raw energy cause instability in the energy market, which in turn has a negative impact on the energy security by generating costs that can not always be fork-lifted by the country, and the lack of payment for imports resulting in the interruption or reduction of oil supplies. However, in the case of new technology, instability may manifest itself in a lack of resources for their growth or even to replace the current aging equipment performance, which also implies a negative impact on safety. New technologies such as energy production from renewable energy sources or the construction of new power gym require high financial outlay. They are not only expensive, but also the waiting period for the implementation of such projects is very long, up to 25 years.

Institutional instability associated with the liberalization of the gas markets and electricity. The uncertainty concerns the changes it intends to implement in the future to the existing forms of regulation. In the EU, the process of liberalization of natural gas and electricity, has been appointed by the implementation of the relevant directives. With the adoption of the relevant legislation in this area in a number of countries have established independent regulatory authorities, which nevertheless require more stability and experience. The institutional instability also include environmental issues, which are reflected in a number of legal norms implemented. The self-realization by governments and by the public impact of pollution from energy may lead to a gradual imposition of restrictions on the operation of the sector, just as the gradual depletion of resources.

Geopolitics of Energy focuses on the balance of power between states and their access to energy resources. Geopolitical uncertainty is in the fact that a large part of the strategic energy reserves, such as oil and natural gas are located in only a few countries (see tab. 1). Many of these countries are periodically experiencing political upheaval, armed conflict as a source of terrorist activities or to build its position by exerting price pressure on importers of raw materials. This situation forced to search for new deposits of raw materials and operation of those that have so far been unprofitable. Many countries have also decided to support the long term development of indigenous sources of energy, in order to become independent of the will of suppliers. The geopolitical dimension of energy instability will indeed become even more important due to the growing global demand for oil and natural gas, the resulting expectations of high economic growth and consumer sphere.

**Table 1: Distribution of the world's energy reserves<sup>a</sup> (in % of world reserves)**

<b>Oil</b>	<b>Reserves</b>	<b>Gas</b>	<b>Reserves</b>	<b>Coal</b>	<b>Reserves</b>
Venezuela	21,3	Russia	18,3	Unated States	22,6
Saudi Arabia	19,0	Iran	11,1	Russia	14,4
Canada	12,6	Turkmenistan	8,7	China	12,6
Iran	10,8	Kattarrh	8,5	Australia	8,9
Iraq	10,3	Unated States	2,6	India	7,0
Mexico	10,0	Arabia Saudyjska	2,5	Germany	4,7
Kuwait	7,5	Azerbaijan	2,0	Ukraine	3,9
United Arab Emirates	7,0	Venezuela	1,8	Kazakhstan	3,9
Russia	5,3	Nigeria	1,8	South Africa	3,5
Libya	3,4	Algeria	1,4	Serbia	1,6

<sup>a</sup> includes propen reserves, which recovered with current technology and prices is profitable. Because of these variables estimates are subject to constant revision.

Sources: own study based on data from World Energy Council ([www.worldenergy.org](http://www.worldenergy.org)) and CIA World Factbook ([www.cia.gov/library/publications/the-world-factbook/](http://www.cia.gov/library/publications/the-world-factbook/)), as of 10.04.2017 r.

### **Conclusion**

The first decade of the twenty-first century has brought sharp increases in energy prices and a growing instability in the global energy market. This situation was caused by the increase in public awareness as to the gradual depletion of the world's energy resources, the necessity of these raw materials and the impact of prices on economic growth, especially growth ambitions and the importance of countries rich in energy resources, who have seen that they can use their resources to pressure on consumers. In addition to these factors, geopolitical impact on energy security have been and still are the climatic factors, social or technical, existing both in extracting energy resources, as well as in countries importing them.

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# COUNTRY RISK FROM THE PERSPECTIVE OF GOVERNMENT BONDS AND BOND ETFs

MICHAELA DOROCÁKOVÁ – PATRIK SLOBODNÍK

## Abstract

Until the debt crisis that resulted from the excessive indebtedness due to necessary rescuing of financial institutions and fighting against economic recession, countries have been considered to be reliable borrower. Nowadays the state in general poses as a risk-free issuer no more. This contribution aims to compare the riskiness of government bonds with lower conservative form of investment in debt securities, such as bond ETFs, which are designed to track the performance of selected bond index.

## Keywords

country risk, government bonds, exchange-traded funds, fixed-income instruments, spreads

## JEL Classification

G11, G12, G15, G19

## Introduction

In financial markets, investors are exposed to various types of financial risks. Some risks are common to all financial instruments, others are specific to a segment of the financial market. Investors understand risk as the certain deviation of the actual return from the expected return. In general, higher risk must be compensated by higher returns. These risks can be measured by subjective or objective methods. It depends from a specific type of risk. In this contribution we will focus on country risk. Country risk can be understood from several views. Firstly, we can talk about country risk in relationship with country bonds. Secondly, we can talk about country risk in relationship with financial markets, including stock, bond, ETF market etc. Country risk includes political risk, economic risk, financial risk, sovereign risk and transfer risk where financial risk may include credit risk, liquidity risk, asset backed risk, foreign investment risk, equity risk and currency risk.

## Literature Review

There are many books that describe the issue of country risk. Fabozzi (2007) describes basic characteristics and types of bonds, particular risks of the bond market and methods for evaluating bonds. The problem of bonds related to mortgage loans and various innovations such as securitized products like CMO, CDO and ABS deserve special attention. Choudhry (2003) introduces the basic rules of investing on the bond markets. He describes the specifics of corporate and government bonds. He also describes different risks of the bond market and how we can measure those risks. In his book, he quantifies the risk with the method of VAR – Value at Risk. Wagner (2012) carefully sorts through the fundamental principles of country risk management, adding context with examples from his quarter century as a political risk insurance underwriter, country risk manager and advisor. Damodaran (2006) focuses on the quantification of the country risk premium. He describes the reasons why risk premium should be different in different countries where investors invest. He quantifies the risk spreads on the bond market, and also on the stock market. He describes various methods for measuring country

risk, as well as the factors that an investor should take into consideration, when deciding or choosing the best fitted method for measuring risk. Damodaran also discussed the above issues in his working paper, *Equity risk premiums* (2016), which is updated every year.

However, while we mentioned a few monographs which were especially aimed at the study of the theoretical background of country risk, we need to look at economic journals and current research problems-working papers. Cantor-Packer (1996) made one of the first studies of determinants and sovereign credit ratings. They focused on an examination of criteria underlying ratings and their impact on sovereign borrowing costs. They found that ratings can be explained by macroeconomics factors like GDP growth, inflation, external debt, income per capita and the default history. Micu et al. (2006) analysed different types of rating announcements of rating agencies. They found that credit rating announcements, especially changes in outlook, have a large influence on CDS spreads. Longstaff et al. (2011) analysed CDS spread in emerging markets and they found that sovereign spreads are more influenced by global factors, rather than local factors. Sovereign credit spreads are more related to the US stock markets than they are to local economic measures. Arghyrou—Kontonikas (2012) also analysed macroeconomics factors to country risk. They found evidence of contagion effects, particularly among EMU periphery countries. They divided the EMU debt crisis into an early and current crisis period. Beirne—Fratzschler (2013) analysed country risk determinants like public debt/GDP, real GDP growth or current account/GDP to CDS spread in 31 countries. They found that there is a “wake-up call” contagion, as financial markets have become more sensitive to countries. Also their model does a poor job in explaining sovereign risk in pre-crisis period for European economies. Market pricing of sovereign risk could not have been reflecting fundamentals prior to the crisis. Aizeman et al. (2013) analysed sovereign risk for fifty countries based on fiscal space and other economic fundamentals. They found out that CDS spreads are partway explained by fiscal space and other economic determinants. There are more recent working papers which have focused on contagion effects linked to the European sovereign debt crisis. Alter-Beyer (2013) and Gross-Kok (2013) examined spillovers and contagion between sovereigns and banks. Lee et al. (2017) analysed oil prices and country risk. They found that country risk is significantly affected by oil price shocks, but the impacts were different.

Bond exchange-traded funds are characterized by several advantages compared with purchases of individual bonds, traditional mutual funds or other instruments providing fixed income exposure (Mazzilli, Maister & Perlman, 2008). These are benefits in the form of low bid-ask spreads and low expense ratio as well as comparable profitability of fixed-income indices with active management tools. Bond ETFs are popular because of their inclusion in the portfolio as a basic component, larger diversification or in order to conduct speculative trading, strategies with yield curves and duration management.

Copying accuracy of selected index of fixed-income ETFs tracking both government and corporate bond index has been investigated by Tang and Xu (2014). Lower performance deviations are documented at ETF copying government bond indices than at those on corporate bond indices and, of course, at regular ETFs that at leveraged funds, where tracking error arises, inter alia, from daily rebalancing. In addition, deviations of fund's returns from index returns positively depend on difficulties in ensuring components of underlying indices. All observed funds exhibit large tracking error and it grows with increasing maturity, what is also confirmed by results of the study by Drenovak, Urošević and Jelic (2012), where they investigated 31 European bond ETFs. These funds, on average, outperform their relevant index by around 10 – 27 bps during the observed period 2007-2010 and ETFs with physical replication are in over-performing more successful.

Fulkerson, Jordan and Travis (2014) have examined bond ETFs from the perspective of cash flows and their characteristics. They identify the sense of bond ETF investors for timing of sales, generating 30 bps of excess return. Fund flows are determined by past returns, expense ratio, fund size and discrepancies between price of ETFs equities and net asset value of securities in their portfolios. These deviations, i.e. premiums and discounts, used to maintain for up to 30 days after day with high or low premiums or discounts (Fulkerson, Jordan & Riley, 2014). Moreover, significantly high discounts, respectively premiums are followed by positive, respectively negative overnight returns and liquidity poses as important determinant of bond ETF deviations from effective pricing.

Mahn (2015) considers it very important to know the process of bond exchange-traded and how the underlying securities, thus indexes, are structured. Nowadays investors amend their portfolios according to bull trends on the markets and environment with the imminent growth of interest rates therefore appears the liquidity, costs and transparency of this financial vehicle as vital.

### **Aim and Methodology**

The goal of this contribution is to analyse the relationship between the government bonds and government bond exchange trade funds (ETF) in term of risk. For this purpose we will use correlation analysis, namely Pearson's correlation coefficient. We will quantify the country risk of Austria, Italy, France, Spain, Finland and Netherlands in time period from 2000 till 2017. According to Damodaran (2006) we will measure the country risk by method „bond default spread“ also known as default spread or country default spread. This method is more sensitive to market situation like others. This model (also referred to as equation 1) is simply the difference between the 10-year bond yields of the risk country and the 10-year bond yields of the benchmark country (top rating country). For the benchmark country we chose Germany because of his long-term best ratings and macroeconomic conditions. It should be noted, that this model can be used only in situation, when both countries denominated bonds in the same currency.

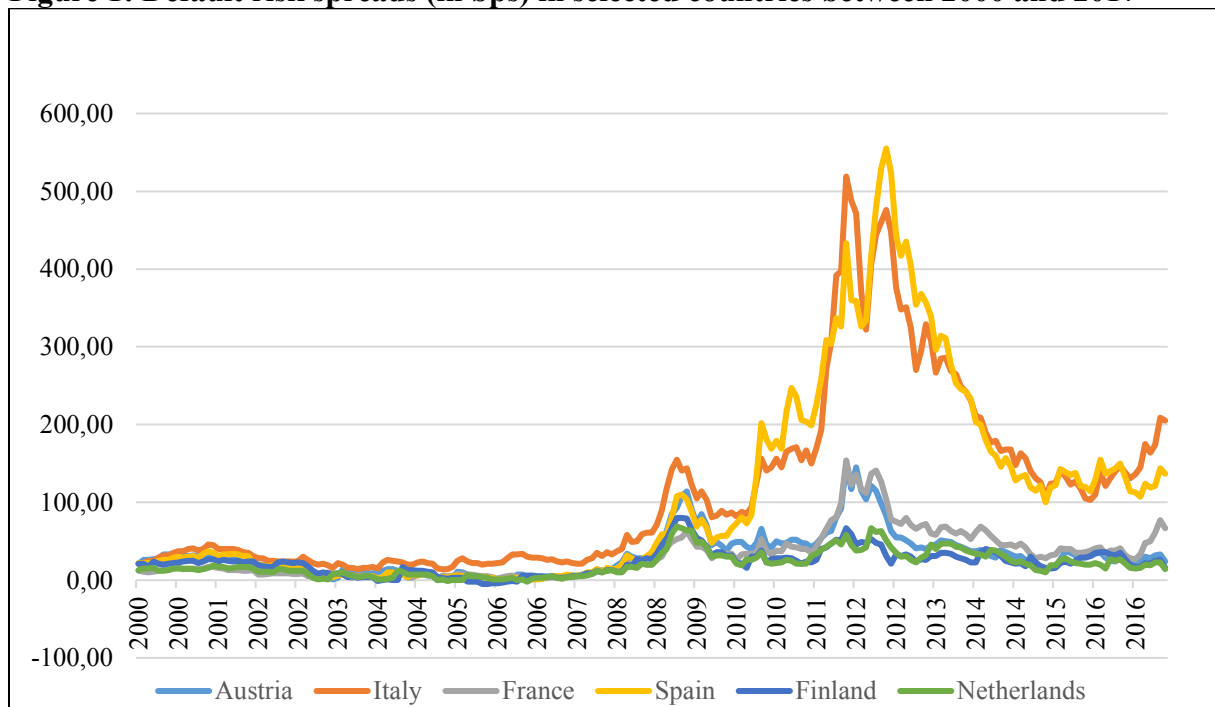
$$\text{default spread} = \text{bond yield of country } X - \text{bond yield of riskfree country (1)}$$

Similarly, we quantify the spreads between monthly returns of individual government bond ETFs and returns of German government bond ETF. Each of these funds is provided by BlackRock under the appropriate designation iShares Government Bond UCITS ETF that is designed to track relevant Barclays Treasury Bond Index with bonds of various remaining time to maturity of minimum one year in its portfolios. In order to investigate the correlation between default spreads of government bonds and return spreads of exchange-traded funds we analyse the data from observation period June 2012 – March 2017, because we have been constrained by inception dates of ETFs. In this paper, we used data on monthly basis from different databases. We used mathematical and statistical methods to compile acquired data. We processed the data from the Eurostat database and available sites, [www.morningstar.co.uk](http://www.morningstar.co.uk), [www.finance.yahoo.com](http://www.finance.yahoo.com), [www.tradingeconomics.com](http://www.tradingeconomics.com) and [ec.europa.eu/eurostat](http://ec.europa.eu/eurostat) along with the ECB published data on [www.ecb.org](http://www.ecb.org).

## Results

In the figure below we can see country default spread for selected countries in the time period from 2000 till 2017. During this period we could see several important financial events. First of all we can talk about dot.com bubble from late 90s. This bubble was related to companies associated with the internet. Dot.com caused a huge losses in the stock market, however, spreads in the 2000s showed low volatility. During a crisis like this, investors demand “safe-haven” assets like gold or bonds. This demand causes the bond yields to fall. The bond yields of our countries fell, but those movements had the same trend in every country. About default spread we talk in a situation, when bond yields of countries move in different ways or level. Until 2008 the spreads do not show much volatility and investors do not make any differences between countries. Another case of crisis was the mortgage crisis in the US market in 2008. The source of this crisis was the fact that US banks provided mortgages to risky clients. Subprime mortgages are a kind of mortgages, when the borrower is very risky. Because of factors like level of integration, globalization and specific relationships among financial institutions of different countries, crisis from US became a worldwide crisis. In the first half of 2008, we saw the growing spreads of government bonds. From 2008 government debts of our countries increased by considerable level. Another shock came in 2010. From this year we see enormous rising spreads. In years 2010-2013 many countries were forced by the financial crisis from 2008 to spend a significant amount of money to support the economic recovery.

**Figure 1: Default risk spreads (in bps) in selected countries between 2000 and 2017**



Source: own processing, data extracted from ec.europa.eu

### Government bonds vs. government bond ETFs

If we look at government bond ETFs of selected European countries that have a wide range of treasury bonds in their portfolios and compare them with individual government bonds, we could expect that there is some relationship between their risk spreads. However, we only identify significant correlation for three countries (see Table No. 1), namely for Austria, Italy and Spain, but countries with highest default spreads, thus Italy and Spain, exhibit only a weak positive correlation.

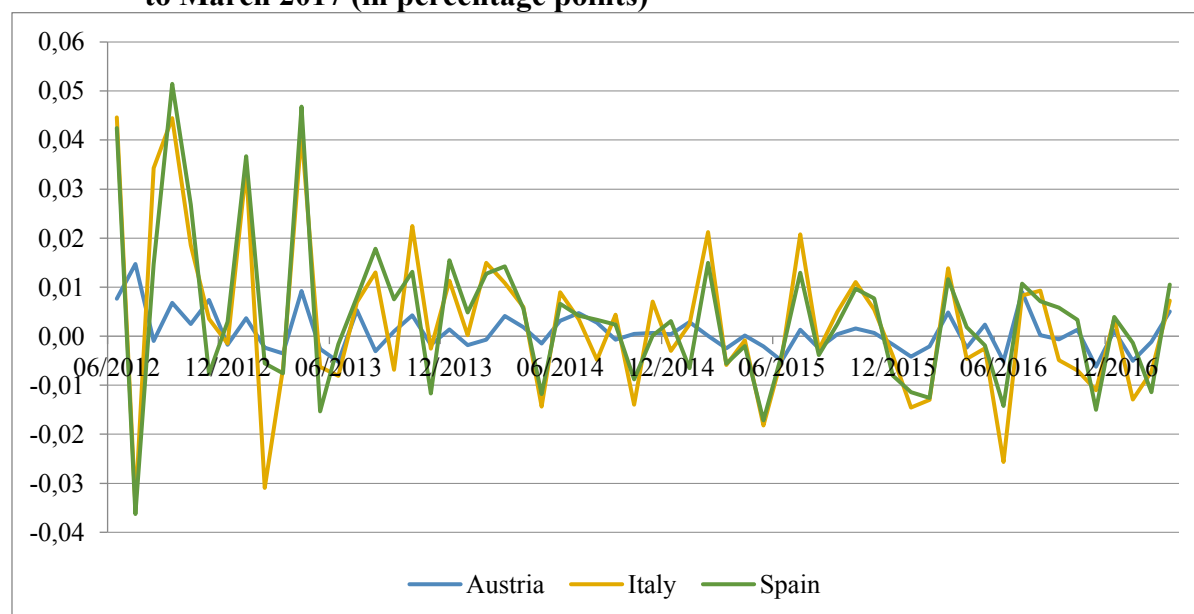


**Table 1: Correlation between default risk spreads and return spreads of government bond ETFs**

	Correlation coefficient	T-statistic	Critical value (5% level of significance)
Austria	0.405	3.313	1.673
Finland	-0.001	-0.011	
France	0.212	1.626	
Italy	0.292	2.280	
Netherland	0.063	0.469	
Spain	0.294	2.306	

Source: own processing

Spreads between ETFs returns of these three countries and returns of German government bond ETF are shown on the graph (see Figure No. 2). On the one hand, in the case of countries with higher default spreads there appear higher return spreads of exchange-traded funds. On the other hand these spreads tend to exhibit higher volatility and they get considerably into negative values and it means that such funds generate lower yields than German government ETF. Moreover, we document that despite the recorded growing default risk spreads of government bonds in recent times (see Figure No. 1), return spreads of exchange-traded funds get negative values more and more often (see Figure No. 2). Based on these findings we can conclude that in the case of government bonds of more risky countries investors should choose investments in the form of individual government bonds rather than to buy treasury bond exchange-traded funds.

**Figure 2: Government bond ETFs' return spreads of selected countries from June 2012 to March 2017 (in percentage points)**

Source: own processing, data extracted from [www.finance.yahoo.com](http://www.finance.yahoo.com)

### Conclusion

Since the beginning of the global financial crisis, the credit risk of several countries has clearly increased, causing a significant growth in default spreads, as higher risk should be compensated by higher returns. Currently, there are a number of exchange-traded funds on the market, which

are nowadays becoming one of the most popular financial instruments that invest in government securities. Although we also document higher return spreads of ETFs for countries with higher default risk spreads across countries, we do not identify critical correlations between these categories within each country. Moreover, the trend of their latest developments shows that it is more suitable for investors with higher propensity to risky instruments to buy individual government bonds rather than government bond ETFs.

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# **CONTRIBUTION OF THE EU COHESION POLICY TO THE COMPETITIVENESS OF REGIONS OF THE V4 COUNTRIES THROUGH PROMOTING INNOVATION AND ENTREPRENEURSHIP**

MAŁGORZATA DZIEMBAŁA

## **Abstract**

Several different factors determine the competitiveness of the regions, also depending on the developmental strategy adopted by the regions. Entrepreneurship and innovation, closely interrelated, constitute the key factors in determining their competitiveness. These factors are supported with financial resources under the cohesion policy in the countries of the Visegrad Group. It is claimed that the entrepreneurship potential of the V4 countries continues to be insufficient, reflected in the interregional disparities, which affects the competitiveness of these territorial units. Cohesion policy fulfils an important role in encouraging these policies in the V4 countries. The main purpose of this article is to present the role of entrepreneurship and innovation in the creation of regional competitiveness as well as to discuss the regional entrepreneurship potential of the V4 countries. It is also to indicate the significance of the cohesion policy funds in the promotion of competitiveness and innovation within a given group of countries, in particular in the perspective of 2014–2020.

## **Key words**

entrepreneurship, innovation, EU cohesion policy, regional policy

## **JEL Classification**

R0, R1, O3, L2

## **Introduction**

Currently, strong competition is the factor which challenges European regions to a great extent. These territorial units are considered to constitute the key areas where equally the economic growth and prosperity can be observed [20, p. 1]. The interregional competition is currently highly affected by the need to create optimal conditions for investors, comprising a particular combination of factors already existing in the region or the ones that are to be made. As it has been emphasised by Porter, in his attempt to identify the cluster, the competitive advantage is closely connected with factors existing outside the enterprise – with the location, affecting the efficiency of production factors use as well as its improvement [25, p. 246, 261]. However, the regional competitiveness should also be associated with the creation of favourable conditions for the region inhabitants, thereby „regional competitiveness is the ability of a region to offer an attractive and sustainable environment for firms and residents to live and work” [7, p. 4]. Therefore, the environment, being improved in a sustainable manner, should promote the activities of entrepreneurs to develop and undertake new actions as well as to initiate innovative solutions, and establishing the particular stimulating entrepreneurship entrepreneurial ecosystem within the region. The regional competitive advantage is shaped in relation to numerous distinctive factors, with specified development strategies being implemented at the same time.

In the context of the ongoing discussions, among all the factors determining the regional competitiveness, the particular attention should be drawn to entrepreneurship and innovation, which are interconnected. The entities, entrepreneurs, local communities, innovative environments occurring within the region, are incorporated in particular relationships, and the region itself can be referred to as entrepreneurial and competitive, which is greatly dependent on the economy as well as on the regional community [17, p. 18].

Entrepreneurship and innovation are supported in the Visegrad Group (V4) countries with financial resources under the EU cohesion policy. It is maintained that the entrepreneurial potential of the V4 countries continues to be insufficient and low, which is generated by the existing interregional disparities, and that in turn highly affects the competitiveness of these territorial units. Cohesion policy fulfils an important role in encouraging these policies in the V4 countries.

The main objective of this article is to present the role of entrepreneurship and innovation in the creation of regional competitiveness as well as to discuss the regional entrepreneurship potential of the V4 countries. It is also to indicate the significance of the EU cohesion policy funds in the promotion of competitiveness and innovation within a given group of countries, in particular in the perspective of 2014-2020.

### **1. Some considerations on factors determining the contemporary regional competitiveness**

Nowadays, competition takes place not only between countries, enterprises, but the "competition space" is also comprised by spatial units – regions [3, pp. 4-5], which demonstrate different ability to meet its implementation, and that in turn is manifested in the existing diversities. Regions compete with one another to attract investors by creating the appropriate conditions to conduct and carry out economic activities. Regional competitiveness is closely identified with "the ability to produce goods and provide services which meet the demands of international markets and concurrently are able to generate a high and sustainable income level" [9, p. 75], as well as to be associated with a relative high level of productivity [9, pp. 75-76]. The ability to increase this competitiveness is strictly connected with the prosperity of territorial units. However, a great attention should be paid to the source of regional competitive advantage as well as to its creation. The common characteristics of the regions and the ones typical for each of them can also be related to the regional externalities as well as by referring to the resources, which affect the enterprises directly, and the competitive advantage of the region indirectly, associating them with the so-called soft externalities [21, pp. 3-5]. A list of various factors determining the competitiveness of particular territorial units, which are significant for regional development, has been enumerated [29], and of which the meaning is stressed with reference to relevant regional development theories. These factors can be subcategorised to the following groups: infrastructure and accessibility, human resources, production environment [20, pp. 2-4-2-14; 2-32].

The importance of individual factors (sources of regional competitiveness) is differentiated, mainly because currently more attention is paid to the ongoing shift from development factors (locational) to innovative ones, from hard to soft, immaterial ones, among which human capital and knowledge being the most greatly attributed, and from the functional to cognitive approach [4, pp. 8-9]. The incidence of "old" and "new" location criteria is indicated, stressing the quantitative criteria, which have been replaced by those of qualitative nature [12, pp. 12-17].

The unique set of factors – regional assets and existing potential, affects the diverse growth potential of the regions as well as the adopted path of development of particular territorial units and it is associated with territorial capital. The territorial capital is defined as "a set of localised assets – natural, human, artificial, organisational and cognitive ones – which constitute the competitive potential of a given territory" [5, p. 1387], thus when being linked with territorially immobile and/or poorly mobile assets, both of material, immaterial, public and private nature, it constitutes a framework for discussions not only on regional development but also on causative agents of innovation. The role of this capital is to enhance the efficiency and productivity of the existing activities in regions. Consequently, it includes the initial factors as well as the driving force. Therefore, in this respect the particular components of this capital are identified, among them human capital being mentioned, which is determined by entrepreneurship, creativity, private know-how, co-operation networks of tangible and intangible assets reflected among others through strategic alliances in R&D, by relational private services and agglomeration [5, pp. 1385-1390].

Regions compete among one another relying on diverse factors depending of the adopted development strategy, which simultaneously determines their competitiveness. Regions may adopt the so-called "low road strategy" basing their advantage on cost factors. Therefore, competition, which is founded on low wages, docile labour, low taxes or a varied amount of subsidies – still continues to happen. Territorial units implementing this strategy create their competitiveness by focusing on traditional factors, related to among others land availability, work resources, infrastructure or the location-determined factors. Regions may decide to adopt both the more challenging development strategy to perform, referred to as „high road“, and the policy which is based on the promotion of entrepreneurship and technology-based economic development (the example of which is Silicon Valley). In such regions, the highly-skilled and qualified employees tend to be more venturesome. It must be noted though, that the adoption of the former strategy makes it difficult to adopt the latter one [19, pp. 1104-1112].

Regions, due to their productivity, and thus to their competitiveness, concurrently indicating the factors on the basis of which their advantage is being shaped, may be sub-classified to the following types: region as production sites - of low dynamic range, relying on traditional factors (covering the low to medium income region range), which attract low-cost production; other ones are: regions as sites of increasing returns, encompassing the high growth regions, which determine the following key factors: employee skills, inter-firm division of labour, the effects of the market size as well as the suppliers' availability. On the other hand, regions as hubs of knowledge are characterised by a high level of both R&D, entrepreneurship, start-ups creation and patent activity [20, pp. 2-38-2-40].

Therefore, a question arises about the direction and the choice of such factors, which will enable the creation of long-term development strategy of a particular region, in the times of great change and turbulence, in which innovation is significantly valued. This also includes the choice of proper specialisation based on the existing regional resources, selecting the right activities which will shape the competitive advantage of the region and thus of smart regional specializations [10]. They are, in fact, to improve the competitiveness of the regions in the long run, concurrently supporting their development. In this respect, competitiveness may be defined as "the difference in the rate of economic development across regions and the capacity and capability of regions to achieve future economic growth relative to other regions at a similar stage of economic development" [16, p. 2].

Today, in the era of the intensifying competition, the attention should be paid to innovation as well as entrepreneurship, of which the importance is greatly emphasised by the European Commission, and which also underlines the contribution of SMEs to economic growth [9, pp. 95-113]. Entrepreneurship is essential for generating the economic growth [2, 28] as well as for stimulating regional competitiveness.

## **2. Entrepreneurship and innovation in regions**

Entrepreneurship constitutes an important factor in enhancing competitiveness of regions by affecting this competition and it is closely related to innovation. This results from the nature of the enterprise connected with "the process of planning, organising, conducting business activities as well as running the risk related to it" [13, p. 311]. The Green Paper clearly specifies that entrepreneurship should be associated with creativity and innovation.

It is closely related to the motivation of individuals as well as to their potential, which enables them to identify specific capabilities and their implementation manner, which should allow them to be economically successful. It refers to entrepreneurs, who are ready and willing to run the risk, and who are striving for independence and self-realisation [8, pp. 5-6]. The entrepreneur is therefore an entity, which may support the development of innovative ideas, and concurrently be responsible for their creation, distribution and application [23, p. 11]. Therefore, one of the features the entrepreneur must possess should be the propensity to take economic risks while being prepared to bear failure.

Three characteristic features of entrepreneurship may be distinguished: the turbulent and dynamic process, related to the fact that enterprises expand, develop, as well as fail. Another of those features involves innovativeness, the already indicated one, associated with the introduction of new products, services and technology to the market. This is the result of the emergence of new opportunities as well as the need to meet the demand. Another feature regards the size of the control process undertaken by the entrepreneur, being the owner at the same time. The significance of local factors for the entrepreneurship development as well as the importance of the entrepreneurship ecosystem are being emphasised [23, pp. 42-46].

According to OECD, entrepreneurship is the result of favourable framework conditions, well-designed and developed governmental programmes, which have been properly targeted. The already formed, supporting cultural attitudes are regarded to be another important factor, since they affect, among others the desire to co-operate with other enterprises [23, pp. 12-14]. According to Nijkamp, the following driving forces of the entrepreneurship may be indicated: personal motivations, social environment (so-called social milieu) as well as the external business culture [22, pp. 398-400].

Entrepreneurship in territorial terms is differentiated, among others the concentration of enterprise activities in large urban areas takes place, which is in opposition to the situation in rural areas. Enterprises cumulate in clusters, the incidence of which is determined by a variety of factors, different in various regions [23, p. 26]. It must be noted that the potential of the individual regions as regards the creation of new enterprises together with their development is diverse. Therefore, the following three dimensions of the environment are implied, which are to favour entrepreneurship and are related to: industrial structure, organisational structure and business climate [18, pp. 125-129]. The existence of regional disparities within the formation of new enterprises is considered to derive from the following factor groups: entrepreneurial personality, intergenerational transmission of entrepreneurship. Education, choices and experiences gained in the course of a professional career, including previous employment in a

small enterprise or operating in the environment widely promoting self-employment, they all generate a greater propensity to set up companies [11, pp. 945-946]. It is possible to distinguish between the "old" entrepreneurship of the region, which is deeply rooted in the past, being the core of the regional economy and the new one, which is closely related to creative and innovative activity and new economy [17, p. 22]. Business environment as well as networks are significant, as it is indicated by Porter, since the quality of business environment affects the efficiency of companies [25, p. 262]. Further considerations will focus on the analysis of the Visegrad Group regional entrepreneurship.

### **3. Entrepreneurial potential of the regions of V4 countries**

The progressive process of economic transformation in the V4 countries has always been associated with the change of conditions for enterprises operation, concurrently affecting the entrepreneurship development in this group of countries. The Regional Entrepreneurship and Development Index (REDI) has been applied to analyse the regional situation of this group countries within the entrepreneurship and its use potential. 3 subindices have been included within this indicator, such as entrepreneurial attitudes, entrepreneurial abilities and entrepreneurial aspirations. They comprise a total of 14 pillars - factors grouping the specified variables (individual and institutional). The first subindex: entrepreneurial attitudes is related to among others the approach of inhabitants of particular regions concerning entrepreneurship, both including the perception of business opportunities, the skill for start-ups, the understanding of risk, social capital, cultural support and partially reflecting the regional system of business acumen. On the other hand, the subindex of entrepreneurial abilities is associated with an entrepreneur's characteristics as well as with the high-potential start-up. The last of the subindices – entrepreneurial aspiration refers to the activity strategy [26, pp. 36-38].

If the measurement of the development was to be the GDP/capita rate, the links between the REDI and regional development could be observed. The regions of richer countries come top in rankings in view of REDI than the regions of southern Europe including such countries as Greece, Italy, Portugal, Spain, among which the region of Greece comes the lowest in terms of entrepreneurship [26, p. 51]. The best region in terms of entrepreneurship out of 125 regions covered by the REDI ranking was the Danish region: Hovedstaden, including Copenhagen and then respectively: London, Île de France and Stockholm. The lowest ranking place - the three last ones were occupied by 2 Romanian regions and 1 Greek one [26, pp. 53-54].

Therefore, what is the potential of the V4 countries with regard to the entrepreneurship? Out of the 18 analysed regions of the V4 countries (the analysis included 6 Polish regions of NUTS 1, Czech Republic as a whole country, 7 Hungarian regions of NUTS 2 and 4 Slovak regions of NUTS 2) with Bratislava occupying the highest ranking position (68 one) followed by the Czech Republic. The remaining analysed regions of the V4 countries were classified as the ones characterised by a very low entrepreneurial potential with Hungarian regions being attributed with the lowest levels of this index (table 1).

The k-average clustering of the regions has enabled to identify 5 main groups out of which the first one comprises of "the most entrepreneurial regions", whilst the last one – the regions of the lowest enterprising level, and it has shown that only Bratislava could be classified in the third of the EU regional groups. On the other hand, the regions of the V4 countries have been included within the fourth, most numerous group, which contained Czech Republic, all Polish regions as well as the Hungarian region coming 99 in the ranking, some of German regions, mainly of former Eastern Germany, as well as Spanish, Italian and Croatian ones. The remaining Hungarian and Slovak regions have been classified as regions of the lowest



entrepreneurial potential, together with Greek, Portuguese, Romanian and 2 Italian regions [26, p. 55].

**Table 1: The REDI classification of regions of the V4 countries and their stages of development**

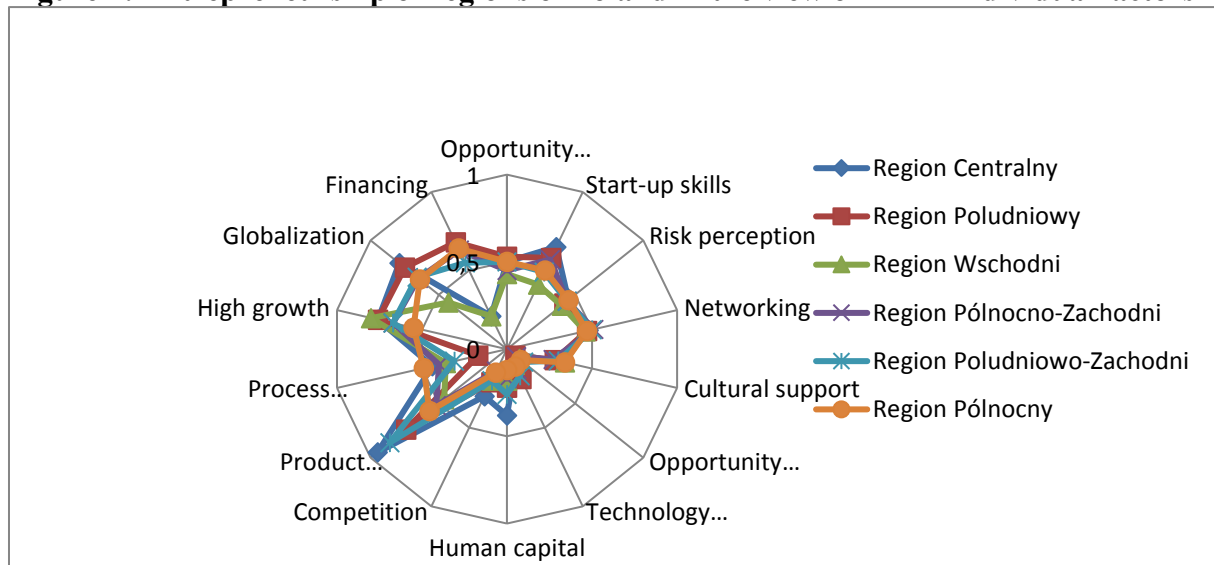
Region	The regional classification by development stages according to GDP/per capita*	REDI		Entrepreneurial attitudes		Entrepreneurial abilities		Entrepreneurial aspirations	
		Ranking	REDI value	Value	Ranking	Value	Ranking	Value	Ranking
Bratislava Region	5	68	44.0	49.4	54	50	60	54.4	35
Czech Republic	all regions at stage 2, except for Prague - 5, Jihovýchod - 3	80	37.0	29.5	104	21.5	107	60.1	24
Region Południowo-Zachodni	dolnośląskie - 3, opolskie - 2	86-88	36.1	39.7	71	18.7	112	50	48
Region Centralny	łódzkie - 2, mazowieckie - 4	86-88	36.1	40.4	70	20	111	48	51
Region Południowy	małopolskie - 2, śląskie - 2	92	34.1	38.5	75	16.4	114	47.4	55
Region Północny	kujawsko-pomorskie - 2, warmińsko-mazurskie - 1, pomorskie - 2	90	33.2	39.7	72	12	124	47.9	52
North-West Region	wielkopolskie - 2, zachodniopomorskie - 2; lubuskie - 2	96	32.3	38.3	79	12.4	123	46.2	63
Közép-Magyarország	4	99	31.4	30.2	102	31.8	93	32.1	101
Region Wschodni	lubelskie - 1, podkarpackie - 1, świętokrzyskie - 1, podlaskie - 1	105-106	29.2	36	90	13.7	121	38	81
Západné Slovensko	2	110	25.8	21.9	111	16	117	39.4	77
Stredné Slovensko	2	111	24.9	22.1	110	15.6	118	36.9	85
Východné Slovensko	2	112	24.5	20.5	117	13.6	122	39.3	78
Dél-Dunántúl	1	113	23.8	22.2	109	24.2	100	25	117
Észak-Magyarország	1	115	22.4	19.3	122	24.3	99	23.6	118
Közép-Dunántúl	2	117	22.0	20.7	116	23.9	101	21.3	123
Nyugat-Dunántúl	2	118	21.5	21.4	113	25.4	98	17.7	125
Észak-Alföld	1	119-120	21.4	20	119	23.4	104	20.9	124
Dél-Alföld	1	121	21.0	20	120	20.1	109	23	120

\*regions have been classified according to GDP/per capita EU=100, the average 2012-2014, stage 1: <50, stage 2: 50-75, stage 3: 75-90, stage 4: 90-110, stage 5: >100

Source: Own study based on: [26, pp. 53-54, 57-59; 27; 1, p. 16]

As the analysis indicates, most of the analysed regional groups have been classified to groups 1 and 2, namely the groups of the lowest development stage, where the cost factors play an essential role. As a consequence, the question about the causes of such a relatively low position of the V4 countries in the ranking could be raised, and, as a result of the considerations, this is to some extent associated with entrepreneurship development in the regions of the V4 countries. Consequently, further considerations focus on the analysis of particular pillars (factors) of the index. The Czech Republic was excluded from the analysis, due to the lack of data.

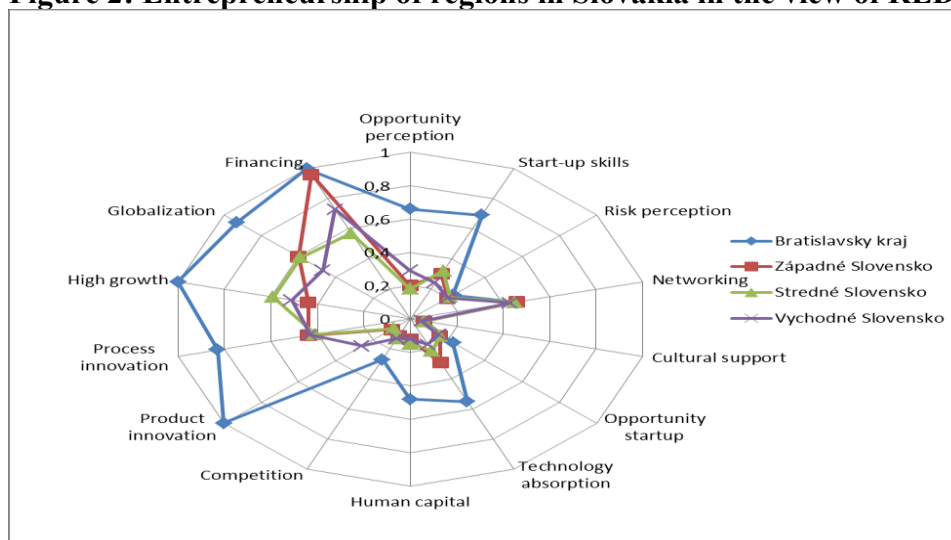
**Figure 1: Entrepreneurship of regions of Poland in the view of REDI individual factors**



Source: study based on: [26, p. 65]

The analysis of Polish regions with respect to entrepreneurship indicates that the least favourable results within the particular enterprising factors have been demonstrated by the East Region including the most poorly developed Polish provinces (fig. 1). It was noted that the greatest weakness of Polish regions is unsatisfactory situation within the entrepreneurial ability, in particular with regard to opportunity start up, technology absorption as well as competition, which altogether contribute to the existing entrepreneurial limitations. The attention must be paid to human capital, since only in the central region the situation is satisfying in relation to the remaining Polish regions. In terms of product innovation, the situation is relatively favourable in all regions, except for the eastern one. Additionally, within the scope of financing the situation is satisfactory except for Central and Eastern regions [see: 26, pp. 108-109].

**Figure 2: Entrepreneurship of regions in Slovakia in the view of REDI individual factors**

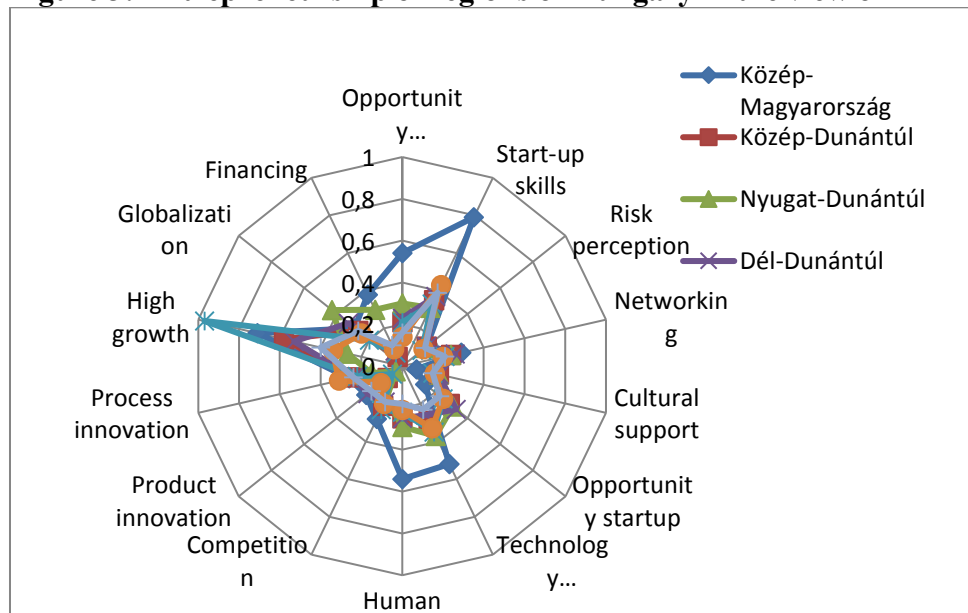


Source: study based on: [26, p. 65]

Out of the four analysed Slovak regions, only Bratislava is stated to have reached relatively good results within the particular factors which determine the enterprise profile (fig. 2). Weak results have been achieved within the scope of cultural support, it being an essential constraint,

as well as within risk perception, opportunity start up and competition. Only except for financing have the remaining regions of Slovakia reached low results within the respective factors determining entrepreneurship [see also: 26, p. 111].

**Figure 3: Entrepreneurship of regions of Hungary in the view of REDI individual factors**



Source: study based on: [26, p. 64]

The Hungarian regions are seen to have achieved the lowest indicators within the entrepreneurship, with only one region Közép-Magyarország being distinctive in terms of start-up skills. Among the problematic areas of these regions cultural support should be greatly emphasised.

However, the analysis in the regions would be incomplete without the consideration of the entrepreneurship in respective countries as a whole being taken into account. The situation is demonstrated by Global Entrepreneurship Index 2017 [6] in the view of which Poland has been ranked 31, Slovakia 31, Czech Republic 40 and Hungary 47.

#### 4. EU cohesion policy in support of entrepreneurship and innovation in the V4 countries

The V4 countries, together with their regions, have benefited from financial aid under the cohesion policy for the period of 2007-2013. In the Czech Republic, the support for innovation-based growth of enterprises in the years of 2007-2013 originated from Operational Programme Enterprise and Innovation to which the allocation of EU funds amounted to 3.5 billion euro. In Hungary, the EU funds were oriented on the Economic Development Operational Programme of the New Hungary Development Plan as well as on Competitiveness and Innovation Framework Programme. In Poland, entrepreneurship was supported by the Innovative Economy Operational Programme 2007-2013 with 8.25 billion euro of the EU allocation [24, pp. 56, 68, 90, 94].

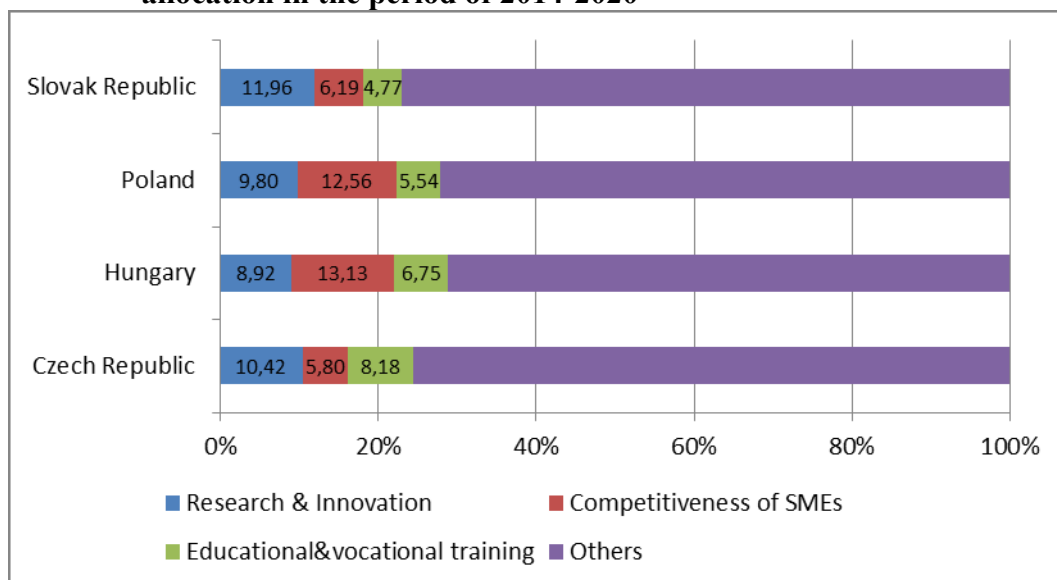
The volume of the total EU support in 2014-2020 for research and innovations in EU-28 from the ERDF (European Regional Development Fund) and EAFRD (European Agricultural Fund for Rural Development) has jointly amounted to over 43 billion euro with 94% of it, i.e., 41.1 billion, will originate from the ERDF. The largest allocation for R&D has been granted to

Poland, over 8 billion, since it is the main beneficiary of the cohesion policy. These figures do not include the national co-financing, which will increase the amount of expenditure and will amount to 10 billion euro for Poland, 4.2 billion euro for Czech Republic, 3.1 billion euro for Slovakia and 2.6 billion euro for Hungary. However, the significance of this support varies among the V4 countries, since the total share of EU support for R&D is the highest in Slovakia, constituting 12%, whilst the highest share among all EU countries is taken by the Netherlands, 19.2%.

The EU support is also granted for the SMEs' competitiveness, which will be backed with over 63 billion euro, and which will originate from the ERDF (52.1% of total allocation, i.e., 33.2 billion euro), from the EAFRD 43.8%, and from the EMFF (European Maritime & Fisheries Fund) 4.1%. As far as the percentage funds orientated on the support of this sector, it is greatly significant in Hungary and Poland. However, in relation to other countries the highest one was in Portugal: over 24.1% of this sector allocation will be granted in the years 2014-2020, in Luxembourg 21.3%, and in Slovenia 20.3%.

A particular attention must be paid to the volume of support for educational and vocational trainings in the EU-28 on which 34.5 billion euro from the EU funds have been allocated, with 27 billion euro (78.6%) will originate from the ESF (European Social Fund), whilst the remaining aid will come from the ERDF (18.1% - 6.3 billion euro) and from the EAFRD (3.3%). In relation to all V4 countries, Poland will provide the greatest support, in value terms, out of the EU-28. On the other hand, in the Czech Republic the percentage of the EU funds allocated for this sector was the highest out of all V4 countries and in Portugal it constituted 16.9% and was the highest among all EU-28<sup>3</sup> (fig. 4).

**Figure 4: The percentage of the EU funds for the selected areas in the total EU funds allocation in the period of 2014-2020**



Source: own study on the basis [15]

<sup>3</sup> This part of the article (point 5) on the cohesion policy 2014-2020 in the V4 countries has been developed on the basis of information available on the website [15].

**Table 2: The volume of European structural and investments funds for the selected lines of support in 2014-2020, in euro**

European funding	Czech Republic	Hungary	Poland	Slovakia
The volume of total EU support, in euro	23 980 000 586	25013873769	86 095 237 607	15 343 793 992
Support for research and innovation, in euro	2 497 655 874	2 232 132 992	8 436 055 741	1 834 552 108
Support for the SMEs' competitiveness, in euro	1 390 585 615	3 283 930 021	10 815 042 522	950 306 216
The support for educational and vocational trainings, in euro	1 961 826 625	1 688 042 620	4 771 363 996	732 318 238

Source: own study on the basis [15]

### 5. Conclusions and further work

In conclusion, presently entrepreneurship and innovation must be considered to be the fundamental factors determining the regional development and competitiveness. Low costs may be the ground for the regional competitiveness; however, the regions may adopt much more challenging strategy to implement, which is based on the promotion of entrepreneurship and innovation. As it was indicated, the regions of the V4 countries are characterised by a low level of entrepreneurship in the view of REDI indicators, with the Hungarian regions being ranked the lowest. The analysis of individual components of this index enables the recognition of the causes for such a low ranking position of the V4 countries, and at the same time it facilitates formulating some recommendations for economic policy. In the regions of Poland more focus should be cast on the improvement of entrepreneurial ability. The EU funds comprise an essential source of this line of support, particularly in the new perspective of financing for 2014-2020, which should contribute to the increase and improvement of the entrepreneurship level in the analysed regions, also with regard to regional competitiveness.

It must also be remembered that raising of the regional entrepreneurship level, if based on permanent sources, is a long-term process, frequently determined by the history of a particular region. Therefore, policies should be adjusted to the individual requirements of particular regions as well as to their specificity [11, p. 950]. Further research should focus on a detailed analysis of the factors determining the development of entrepreneurship in the regions of the V4 countries and, thus, to adapt policies to the diverse requirements/problems related to the entrepreneurship of respective areas within each of the regions (e.g. to urban areas).

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# CHANGES IN INDUSTRIAL STRUCTURES AND IMPACT ON STOCK MARKETS

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## Abstract

Previous century brought revolutionary changes in the field of science and technology, which have also been reflected in changes in industrial structures of individual economies. Not only the share of individual sectors on GDP creation, but more pronounced changes occur in the industrial structure on the stock markets. Particularly on the stock markets there occur absolutely new sectors that revolutionary influence flows and processing of information. Especially IT companies and IT industries have the dominant position on the markets. Except of that the investors' interest in investing in shares of banks and different financial companies is increasing. Nowadays, expected start of new stage of industrial revolution Industry 4.0 signals other changes in industrial structures, which will be strongly involved in GDP formation, but also a change in the structure of stock indices. The aim of this contribution is to analyse the current state and position of individual sectors in GDP structure and stock indices and to predict possible changes in these indicators.

## Key words

industrial analysis, industrial indicators, industrial structure of GDP, structure of stock indices

## JEL Classification

L70, L88, G19

## Introduction

In the past, the financial theory confirmed the idea, that “stock market is the mirror of economy”. It was proved also by surveys based on data processing in the long-term time horizon, which proved mutually positive relationship between economic development measured by the GDP indicator and stock market represented by relevant stock index. Also the GDP and stock index had relatively similar composition from the perspective of the structure of the sectors. During the second half of the 20<sup>th</sup> century, there have been significant changes in both the composition of GDP and even more pronounced in the industrial structures of stock indices. Stock indicators cease to a large extent to copy real economy, which is also reflected by various anomalies on the markets, including the bubble frequency increase.

### 1. An overview of authors and their work on these issues

Several authors deal with the industrial classification issue, such as Porter (2008), who describes an important role of industrial analysis especially in connection with strategies and business boundaries. Bernstein (2003) assumes that companies belonging to one sector should have certain common characteristics, common development of equity returns. Chan (2007) adds that market rates of shares belonging to one sector should react on the exogenous factors similarly. Significant changes in the structure of GDP and equity indices in 1987 have been pointed out by Sweezy, P. M. Nowadays this issue is dealt by known authors Foster, J. B., Magdoff, F. (2009), who introduced the term so-called financialization of the economy into the theory. In Slovakia there is this issue relatively detailed dealt by authors Baumöhl, E. Lyócsa, Š., Výrost, T. (2011).



## 2. Industrial classification

The basic idea of industrial classification is to merge similar companies into homogenous groups, where several similar elements occur. In the theory, but also in the economic practice there are used various classifications. In general, it is necessary to distinguish between sector and industry. Sectorial analysis distinguishes several sectors within the economy, namely: primary, secondary, tertiary, quaternary and quintary.

Many types of analyses depend also on what we define as industry, which companies we choose for industrial analysis, what kind of industrial classification we use. Unlike the sector, industries can be defined as a sum of units performing the same type of activity. But such a definition of the industrial structure is based on certain simplifications for the following reasons:

- from one raw material different products can be produced in a single enterprise from a variety of industries (oil can be used to manufacture both chemical and food products),
- one product can be manufactured using different technologies,
- a part of industrial production can be produced in agriculture, commercial and other organizations.

The industry can be defined from *an organizational point of view* (as a summary of companies) or from *a production-technical point of view* (as a summary of same products). Industrial classification used in practice poses as a certain compromise of both aspects and industrial profile of every enterprise. It is determined by the type of production produced or used technological process used, which has the largest share in the undertaking concerned<sup>4</sup>.

Today in the most developed economies, there exist strictly defined international standards for the industrial classification and number of data providers as well, which can also have their specifications. It is SIC (Standard Industrial Classification), NAICS (North American Industry Classification System), GICS (Global Industry Classification Standard), FF (Fama and French classification) in USA and within the European Union, NACE (Nomenclature statistique des activités économiques dans la Communauté européenne). Main data providers are known renowned companies. To the biggest belongs Compustat a CRSP (*The Center for Research in Security Prices*). Industrial analyzes are also conducted by companies Bloomberg, Reuters, Morni Bloomberg, Capital IQ, Morningstar, Thomson Reuters and others.

### 2.1 Changes in industrial structures and their analysis

The problem area for the investor today are the differences in classification methodologies, as various researches prove that the use and comparison of individual classifications often show incomprehensible results.

The fundamental problems of existing industrial classification are:

- a) existence of various data providers with different classification,
- b) changes in business activities,

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<sup>4</sup> The industrial classification in Slovakia is based on the basic nomenclature of activities, as contained in the international classification ISIC. In our country, since 1<sup>st</sup> November 1991, the new industrial classification of economic activities (OKEC) has come into the effect, derived from ISIC.

- c) various degree of diversification of companies within the industry.

The composition of industrial structures in particular is changing significantly today, while the traditional structure of the industry with the companies concerned has been maintained for the relatively long time in the past. During the 20<sup>th</sup> century, there has been a significant change and shift, in particular, in the industrial order of development and access to GDP. Over the last two decades, there have been a significant changes in industrial structures, as a whole new industry is emerging – technologies with new companies. The newly-emerging industry of the economy intervenes and also changes the character of traditional industries and their companies (e.g. energy, transport, services etc.)

Under the current conditions there is often very difficult to include a company in the industry, also because companies are often so diversified that they can hardly be classified into one industry. Specifically, this problem applies to holding companies – large corporations that are doing a diverse business is very difficult to include in some industrial structures.

The analyst's role in industrial analysis is to identify the characteristics of individual industries and also to forecast the development of these industries. As basic elements in the characteristics of industries he also selects:

- the sensitivity of industries to the individual phases of economic cycle,
- the way of government regulation,
- type of industrial structure.

When examining industry sensitivity to economic cycle, the different industries are integrated into these categories:

- *cyclical industries* are the ones that are copying the economic cycle, which means that their production is growing during the expansion period and conversely, during the recession, it is declining mainly due to low sales due to low consumer demand, which also has negative impact on the stock exchange rate, as well. They are the automobile industries, consumer durables, building industry,
- *neutral industries* that are not influenced by economic cycle, because their price elasticity is low as well (alcohol, cigarettes, newspapers),
- *anti-cyclical industries* are those that show good results in the time of recession (cable TV serves as an alternative source of entertainment at higher price session of other types of entertainment).

Given that in many economies there is still considerable influence from the state and its interventions, many industries do not avoid the influence of state regulation. In many cases, the state, for example, sets maximal prices for various services such as electricity, gas, communications, what indirectly affects the profits of these companies and therefore their stock prices. On the other hand the prices of these companies' shares on the markets show lower volatility, which is also less risky for the investor. The state can also through direct interventions (such as licensing) limit the entry of other entities into the industry, thereby affecting the level of profit in companies already operating.

The development of stock prices is also conditioned by the organizational type and the structure within the industry. If some producer has a monopoly position within the industry, it is logical that such a producer will achieve a steady amount of profit and hence stock exchange rate will be fairly stable and a safe investment for the investor. If the industry has an oligopoly structure, with the industry controlled by a small number of producers sharing the market with each other

and having a common pricing strategy, we can deduce that the industry has also a fairly stable earnings income and hence stock prices do not show high volatility.

There is a high volatility in profit and hence equity rates in the sector where many competing manufacturers operate. Of course, in such industry a fundamental analysis is very difficult and it is not easy to predict its development.

The analyst at the industrial analysis level relies on the short and long-term horizons; in the short term, the analyst monitors:

- which industries achieve the higher increases in profit,
- which industries exhibit the best improvement in the indicator P/E,
- the movement of interest rates and which sectors are most sensitive to this move,
- in which industries political events have a significant impact.

For long-term forecasts, the analyst must also take into account global trends and expected structural changes in the economy. From this point of view, he then monitors:

- industries, which will exhibit growth in the long run,
- which industries, on the other hand, will be on the decline or fail in the restructuring of the economy and the transition to an information-type economy.

### **3. The comparison of industrial structures in selected countries in relation to GDP and stock indices**

#### **USA**

Gross domestic product in the USA consists of two basic components, namely the public sector and the private sector. In 1979, the public sector's share on total GDP was 19.278%, while the private sector accounted for up to 80.722%. In this period, industrial production had the largest share on total domestic product, accounting for up to 20.41% of GDP.

The second most represented sector is retail with 11.1%. The third most important sector of GDP generation in 1979 were professional and business services, which generated 6.65% of GDP. On the other hand, the smallest share of GDP was recorded in 1979 in three following sectors. The first is real estate sales, rental and leasing, which contributed 1.3% to total GDP. This sector was followed by the mining industry, which accounted for 0.93% of domestic product this year. The smallest share on GDP, however, had public works, which accounted for only 0.66%.

In the structure for 2015 there can be observed more significant changes. Industrial production declined sharply to US GDP (from 20.41% to 12.0%). Almost twice a share of financial services and information technologies has grown to GDP.

**Table 1: The comparison of US GDP structure and stock index S&P 500 in 1979 and 2015**

GDP			S&P 500		
Industry	% share		Industry	% share	
	1979	2015		1979	2015
Professional and business services	6,65	12,2	Information technology	12,82	20,69
Industrial production	20,41	12,0	Financial services	6,01	16,48
Finance and insurance	3,98	7,2	Health services	5,61	15,17
Retail	11,10	8,1	Consumer spending	10,67	10,05
Wholesale	4,76	5,9	Industrial production	5,81	10,05
Building industry	4,84	8,9	Energetics	25,06	6,50
Art, recreation, accommodation, and catering services	6,37	9,8	Free spending	9,66	12,89
Information	2,36	4,7	Material inputs	14,44	2,76
Transport and storage	3,16	3,0	Public works	4,65	12,89
Other services	5,11	9,6	Telecommunications	5,27	2,42
Education	1,33	1,1	Other services	-	2,99
Real estate, rental and leasing	1,30	13,1			
Mining industry	0,93	1,8			
Public services	0,66	1,6			
Agriculture, forestry, fishing and hunting	1,68	1,0			

Source: own processing according to [www.bea.gov.com](http://www.bea.gov.com)

More marked changes are visible in the structure of index S&P 500. Information technology and financial services today with their market capitalization account for more than a third of the index. Energetics that had significant presence in the S&P 500 stock index in the past saw a significant fall in its weight within the stock market. It is also related to changes in the US economy – the onset of the so called new economy.

### Japan and Germany

Other changes can be observed in comparison of GDP and stock index in Japan and German economy. Japanese gross domestic product is composed of three main components, namely private sector, public sector and non-profit sector. The bulk of Japanese GDP is services. Their share represents up to 19.76% of the total output of the economy. The second most represented industry in the Japanese economy is industrial production, which account 18.67% of the total output of the economy. Wholesale and retail have the third largest share on domestic product, which accounts for 14.20% of GDP. Such a structure is almost identical compared to the first half of the 1990s. Obviously, this is also related to the problems of the Japanese economy, which fell into recession and stagnation after the bubble burst in 1989.

The current situation on the Japanese stock market is assessed by many investors as the Nikkei 225 stock index, which includes 225 Japanese companies. The structure of the Nikkei 225 stock index is divided into eleven sectors, with 22.82% of consumer spending (retail) being the largest.

**Table 2: The comparison of industrial structure of Japanese and German GDP and stock index NIKKEI 225, DAX (2015)**

GDP			Stock index		
Industry	% share		Industry	% share	
	JAP	GER		NIKKEI	DAX
Industrial production	18,67	25,77	Information technology	14,28	9,49
Finance and insurance	4,37	3,92	Financial services	6,71	19,43
Scientific, technical and administrative services	-	11,22	Health services	8,40	16,03
Building industry	6,12	4,68	Consumer spending	22,81	2,95
Distribution, repairs, transport, accommodation and catering services	-	15,48	Industrial production	22,71	11,38
Information	5,52	4,89	Energetics	0,46	-
Other services	-	4,06	Free spending	7,53	19,75
Real estate, rental and leasing	11,66	11,17	Material inputs	7,99	12,43
Public services	-	18,26	Public works	0,35	2,55
Agriculture, forestry, fishing and hunting	1,17	0,56	Telecommunication	8,43	5,96
Energetics	1,99				
Mining industry	0,07				
Wholesale and retail	14,2				
Transport	5,05				
Services together	19,75				

Source: own processing according to [www.bea.gov.com](http://www.bea.gov.com)

Industrial enterprises had second biggest share in the stock market, which make up 22.72%. The third largest share of the index is held by IT companies, whose weight is 14.29%.

Sectorial composition of German GDP significantly differs from the composition of DAX stock index. The largest differences can be observed in three sectors, namely in financial sector, the manufacturing sector and public services (respectively in sector of public services). Financial services are the second most represented sector in the DAX index with a total share of up to 19.44%. However, the same sector accounts for only 3.92% of the output of the German economy in the same year. The share of financial services in GDP and the stock market is diametrically different. The share of financial institutions in the stock market is almost 5 times higher. The second very different sector is industrial production. While the industry generates more than a quarter of GDP (25.77% of GDP in 2015), it is less than half in the stock market. It has a share of only 11.38% on the DAX stock index. We also see very large differences in sectorial composition in the case of public services. While these services form the second most represented sector on GDP with a share of 18.26 %, the lowest share of the services is in the stock market (2.55%).

When comparing with US economy and stock index, it can be said that Japan and Germany have significantly stronger representation of industry in the structure of GDP, but also in stock indices.

#### **4. The advent of so-called financialization of the economy**

Financial sector and its services are currently the most dynamically evolving area of almost every economy. Their share of GDP growth has been steadily rising and it cannot be forgotten that there is the largest amount of fictitious assets, different transactions and innumerable quantities of overvalued products in this sector. It can be concluded that the financial sector

contributes to a great extent to the virtualization of the economy and the financial system. We can also document this fact by the following data:

**Table 3: The share of financial services in US GDP (in %)**

Years	1970	1980	1990	2000	2010	2015
Sshare in %	4.128	4.906	5.861	7.543	7.21	7.41

Source: processed according to: [www.bloomberg.com](http://www.bloomberg.com)

This was also highlighted by well-known American economists John Bellamy Foster and Fred Magdoff at *The Great Financial Crisis and Consequences*, who also prove that economy's focus is shifting from productive industries to financial services and introducing a new concept of so-called "financialization of the economy". The growth of financial sector is associated not only with the relative but also absolute growth of employment, which has also resulted in transfers within the industrial structures. In addition, the financial sector binds the most highly qualified segment of the labour market in a large volume and its demands on the quality of workers are connected on the one hand with highly sophisticated financial products and, on the other hand, the entire global financial market has gone through a high degree of intellectualisation. The growth of the share of financial sector on GDP is often associated with with significant speculation, which is difficult to quantify at the present time. Their real book value becomes a big problem. A speculative principle of these financial instruments is often far higher than the amount of funds injected. It is logical that such transactions require deregulation, which ultimately leads to the growth of destabilizing tendencies and the formation of increasingly larger financial bubbles. Interesting is also the opinion of P.M. Sweezy, who pointed out in 1987 and this idea together with Madoff resumed in 2009 that financial expansion is linked to the stagnation of the other spheres of the economy. Over 90s, two trends can be traced to the stock market:

1. huge growth in the share of equity indices of firms associated with internet economy,
2. significant growth in the share of financial services in equity indices.

On the stock markets, American companies of so-called new economy were in great attention of investors. The internet economy grew by 11% in 1999, while the entire economy exhibited the growth rate of 4.2%. Thus, internet economy's sales also outstripped industries such as the automobile and insurance industries. The strong influence of financial institutions on the economy was also reflected in the increase in the share of stock indices.

**Table 4: The share of financial services in S&P 500 index**

Year	1979	1990	1995	2000	2005	2010	2015
% share	6.01	9.8	12.08	17.2	21.04	15.1	16.47

Source: processed according to: [www.marketcapitalisation.com](http://www.marketcapitalisation.com)

While financial services are contributing to US GDP of only 7.89% in 2010, the share of up to 15.1% in the S&P 500 structure is up to twice as much as they are contributing to GDP. These data lead us to the conclusion that the stock market does not always copy the real economy and is currently largely marked by the speculative component of the financial sector.

In Japan and Germany, the financial sector does not record such a significant increase of share in GDP. In the case of Germany, it can even be concluded that compared with 1990 the financial sector even recorded a decline compared to 2015. Even in Japan, it did not record even more significant growth in the stock index. The German stock market is already showing the tendency of strong growth in the financial sector's share of the DAX stock index.

### Conclusion

In particular, the last two decades show significant changes in industrial structures. Not only their share in GDP generation is changing, where the so-called new economy is reflected, that is uniquely associated with new technologies – especially with the internet in the 90s. Traditional industries, especially industrial production, are declining in their share of GDP, leading to information technology in particular. These changes are even more pronounced in the structure of stock indices, where the position of informatics and the financial services industry is dominant. The data show that the industrial index structure no longer correspond to the GDP structure, from which it can be deduced that the stock market does not copy the economy. In connection with the significant growth of financial services, a new phenomenon has emerged – the financialization of the economy and, in particular, of markets. With Industry 4.0, significant changes in industrial structures of GDP and stock markets are likely to be expected. With a high degree of robotization, it is possible to assume again, in addition to the latest technologies, the role of the industrial production, which will provide the entire process of robotization with IT, will be further enhanced. We expect that the financial services sector, which is particularly demanding for human capital, will in the near future show a decreasing trend.

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# TELEPHONE COMMUNICATION WITH THE INVESTMENT INTERMEDIARY CONTRACTS

VLASTIMIL JANDUS

## Abstract

This paper deals with problems of recorded audio communication in case of financial intermediary and customers at financial markets. Aim of this paper is to find out, whether legal person with registration of financial intermediary working in Czech Republic on the basis of permission from Czech National Bank informs the customers about acquiring audio records. Initial premissis, that those people do not inform customer about their intention to make an audio record. Research was made on the basis of making phone calls with representatives of chosen companies, who employ financial intermediary and consequently going through their contracts. We found out, that those financial intermediary do not inform their customers about making audio records. Acquiring audio records and their storage is secured with legal documentation only in case of accepting and transferring instructions in concern of securities.

## Keywords

Financial intermediary, protection of personality, call recorder, securities, investment service, customer.

## JEL Classification

G2, K150, K220

## Introduction

Making phonograms of individuals without their informed consent, for whatever purpose, is in direct conflict with the right to privacy and the inviolability of privacy. The assessment of the eligibility of the phonogram and its subsequent use must therefore always be subject to a proportionality test, while the protection of the personality often fails to protect other legitimate interests of the purchasers of such records. The protection of the personality and the inviolability of privacy is an eternal and grateful subject, according to some lawyers hypertrophy into absurd dimensions, according to others, personality and privacy represent the sacred inviolable space of the individual. On the one hand, archiving calls with potential and existing customers are required after investment intermediaries, and on the other hand there are good customer relationships.

The aim of the thesis will be to find out whether legal entities with the registration of an investment intermediary operating in the Czech Republic on the basis of a license from the Czech National Bank inform customers about making a phonogram. The underlying prerequisite will be that the tied agents of the investment intermediary do not inform about their potential customer record.

The work will be based on reading of literary sources, relevant laws and Internet resources. All resources used will be listed in the literature. The paper is based on descriptive, synthesis, comparison and analysis methods.

### **Making digital recording**

Recording of the record is governed by the Civil Code, according to which it is generally possible to capture in any way the voice of a person so that with his permission it is possible to determine his identity according to the display. However, other provisions of the Act regulate situations where this principle can be broken and record without such permission under the so-called statutory license. This is the situation where the alert is acquired or used:

- a) in the exercise or protection of other rights or interests of a protected interest, i.e. for the purposes of evidence in court (for example, a record of injury or car crash);
- b) in public appearances on matters of public interest (this is how the dispute over the possibility of obtaining and publishing records of the meetings of the councils) has been resolved;
- c) adequately for scientific or artistic purposes and for press, radio, television or similar news;
- d) under another law for official purposes, i.e. typically in administrative or criminal proceedings. (Hajžin, 2014)

The Civil Code established the possibility of recording in the situations referred to in points a) and b). In particular, the possibility of recording a record for the protection of rights and legitimate interests is considered very practical even in everyday life.

However, any of the above-mentioned statutory options for obtaining a record without consent may not be used in a disproportionate manner contrary to the legitimate interests of a person and may not be freely published or otherwise disseminated. Under Section 86 of Act No. 89/2012 Coll. You can interfere with the privacy of others if you have a legitimate reason. (Act No. 89/2012 Coll.).

The Constitutional Court is strongly opposed to unfair practices of mutual electronic surveillance and hidden recording in both private and professional negotiations, which are usually not only in violation of the law, but are rated by the atmosphere of suspicion, fear, uncertainty and mistrust in terms of societal ethics. (Jirsa, 2015)

### **Telephone recordings**

According to Act No. 5 article 2 of Act No. 101/2000 Coll. a data controller may process personal data without the consent of the data subject if he performs the processing necessary to comply with the legal obligation of the controller if the processing is necessary for the performance of the contract to which the data subject is party or for the negotiation or conclusion of the contract, . The subject of the data is the natural person to whom the personal data relate. However, the fact that a caller may be in a contractual relationship with a customer does not mean that the call can be uploaded without his consent. (Act No. 101/2000 Coll.)

### **Making recordings by the investment intermediary**

According to Act No. 32 article 5 and 6 of Act 256/2004 Coll. the investment intermediary is obliged to keep communication with the customer regarding the investment service provided and with the potential customer for at least 5 years. (Act No. 256/2004 Coll.)

In order to keep the communication record with the customer in the distance communication, the investment intermediary is obliged to use and operate the equipment through a specifically designated telephone line. Under Act 16 of Decree No. 303/2010 Coll. To this end, it acquires and maintains communication in its original form and therefore has the ability to obtain a complete authenticated communication from these devices. The investment intermediary is

obliged to ensure the date and time of communication, the identification of the pages of the communication, the communication content and to ensure the inaccessibility of the communication record. (Decree No. 303/2010 Coll.)

### **Research**

The input data of the research will be telephone conversations with tied agents of individual investment intermediaries in the period from 4th January 2017 to 4th May 2017. Selection of investment intermediaries will be carried out according to 6 criteria.<sup>5</sup> Contact with the selected companies will be established by sending a request for the securities trading services offered by them. After the first phone conversation, contact with the company will be maintained and maintained in a way that will ensure redirection to other tied agents. The reason for the interviews with more tied representatives of the company is the need to eliminate the deviation of the individual misconduct of the tied agent. For all the investment intermediaries under review, the contractual documentation will be examined. The reason is to investigate whether an investment intermediary informs its clients of recording telephone calls through contractual documentation.

### **Criteria for inclusion of investment intermediary in research**

The market for persons, performing investment advice and accepting and transmitting instructions regarding investment securities or collective investment securities is overstated in the Czech Republic. Up to 6th May 2017, a total of 7,312 investment intermediaries are registered with the Czech National Bank. There can be seen the pressure from the Czech National Bank, which tightens the legislation. This is confirmed by the anticipated amendment to Act No. 256/2004 Coll., On Capital Market Undertakings, which mainly implements the MIFID II. Directive, whereby the conditions for investment intermediaries are also expected to terminate the activities of smaller investment intermediaries or those operating the investment Broker as a secondary activity. For the relevance of the research results, it will be necessary to select those entities that will be affected by the largest possible sample of potential injured customers. These companies are primarily companies with a longer history, with a larger sales network and the number of existing customers, which provides them with a majority market share. To qualify an investment intermediary for research, it will have to meet the following criteria.

a) **Registration with the Czech National Bank**

Currently, companies offering similar services as an investment intermediary, but not registered with the Czech National Bank, can be found on the market. This is an offshore company and entities registered with a supervisor of a bank of another State with a branch office. Often, their structure is built to escape regulation by the Czech National Bank. The work is largely based on the Czech National Bank regulations. Therefore, it will be necessary for the subjects being subject to its regulation and therefore registered with it.

b) **Legal form of business**

An investment intermediary is legally entitled to exercise its activity as a natural or legal person. In order to ensure a larger sales network and a higher number of customers,

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<sup>5</sup> Criteria for inclusion of an investment intermediary in research are detailed in subchapter 2.1

investment intermediaries doing business as a legal entity will be included in the research.

c) Main activity of the company

Large brokerage firms provide the services of an investment intermediary only as an ancillary service, which is a secondary activity of the company. In this case, no emphasis is placed on increasing the sales network or the number of customers. Most of these are passive sales. The number of calls from the investment intermediary is minimal. In the case of companies that carry out the activity of the investment intermediary as the main one, there is certain certainty about the need to increase the sales network and, above all, the number of customers that are actively addressed as it is the main income of the company.

d) History of company

To ensure the necessary majority market share, it is necessary to determine the company's time in the market. Due to the number of registered investment intermediaries, there is a high competitive pressure on the market. This makes it particularly difficult for new entrants. For the research, the Company's duration of business has been set at a minimum of 5 years.

e) Company management

In spite of ensuring a sufficiently long history of the company, it can not be unambiguously asserted that the company is active and healthy. The company may be in bankruptcy or liquidation and the other criteria would be meaningless. In order for a company to be included in the research entities surveyed, the company will have to report both revenue growth and profits for the previous five accounting periods and a low or zero ratio of debt.

f) Cooperation with an investment firm

According to Act No. 256/2004 Coll. On Capital Market Undertakings, the Investment Intermediary has the possibility to provide investment advisory services and to accept and transmit instructions regarding either securities or collective investment securities or both of these investment instruments. In relation to the reference to the obligations of an investment firm, a sample of investment intermediaries dealing with securities-only services is required for the research. More specifically, investment intermediaries cooperating with an investment firm will be included in the sample under investigation for the purpose of the research.

### **Research results**

The research sample adds 100 telephone calls made with a total of 61 tied agents representing 20 investment intermediaries. Five calls were made with each company with 2-4 tied agents representing the investment intermediary. Phone conversations were conducted on the subject of securities trading and investment advice on direct trades on the Prague Stock Exchange. Even in one of the telephone calls, the tied agent of the investment intermediary was not informed that the interview was being recorded.

After studying the contractual documentation of all 20 investment intermediaries investigated, it was found that, by signing the contractual documentation, customers agreed to make a telephone call for the receipt and transmission of instructions on investment securities. No customer was informed about the recording of telephone conversations in the provision of investment advisory services in the contractual documentation.

### **Conclusion**

Under normal circumstances, the recording of business-led calls without the knowledge of the uploaded person is a gross interference with the privacy of the person concerned. And as such, it is in most cases morally and legally unacceptable. If the legal obligation to record communication with customers arises, then the law allows us to do so without the consent of the customer.

The aim of the work was to find out whether the tied representatives of the investment intermediary are informing their customers about making a sound record. The goal was fulfilled. In all the phone conversations made, there was no announcement by the tied agent about the recording of an interview. This also confirmed the starting point. The recording of telephone communications with the customer has been treated in all twenty cases in the contractual documentation only at the receiving and forwarding of securities instructions. In order to maintain good customer relationships, I consider it advisable for an investment intermediary to inform its customers about the recording and storage of mutual communication when providing investment advisory services. This would definitely increase the credibility of the investment intermediary.

The work shows that the investment intermediary does not behave illegally in the business relationship with customers, but it can be said that the activity behaves immoral.

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# **CODIFICATION OF PROFESSIONAL TERMINOLOGY**

## **WITH FOCUS ON FINANCIAL MARKETS**

LADISLAVA KNIHOVÁ

### **Abstract**

The creation of professional terminology for any branch of science or field of human activity, its gradual establishment and final codification is a matter of formal language culture, namely the culture of its vocabulary. The objective of this paper is to draw the attention of academia and other experts to the importance of professional terminology for the development of any scientific discipline and identify, analyse and explain the roles of both traditional and state-of-the-art methods used in the process of professional terminology creation, establishment and codification. The author sheds light on the highly professional but fatiguing work of lexicographers which is often not fully acknowledged. Especially in the current global world, the development of science and technology disciplines is not possible without the establishment of relevant professional terminology and its constant refinement in order to achieve a high quality exchange of information between scientists and professionals from different countries. Measured by the number of professional dictionaries published in the Czech language environment, the intensity of lexicology and lexicography activities has rather decreased in recent years. In order to fill the gap to a certain extent, the paper is complemented by specific examples of professional terminology related to financial markets and its codification.

### **Keywords**

Codification, e-dictionary, lexicology, lexicography, knowledge transfer, professional terminology.

### **JEL Classification**

A2, G10

### **Introduction**

One of the most famous biblical texts of the New Testament - St. John's Gospel - begins with a sentence: "In the beginning was the Word". This sentence is not only regularly intoned in conclusion of Catholic worships but it has been paraphrased many times on different occasions. Words are powerful. Rudyard Kipling said: "Words are, of course, the most powerful drug used by mankind." Words and rich vocabulary constitute the culture of every nation. Rich vocabulary of a person is often associated with his/her success. Owing to dynamic development of every society, there are new and new words emerging every day. Some of them disappear; however, many of them sooner or later become subjects to analyses in texts of a particular language corpus. The first significant project in what we might term modern Corpus Linguistics was the Survey of English Usage, instigated by Randolph Quirk at University College London in 1959. The Survey led to the creation of a corpus of one million words of written and spoken British English, made up of 200 text samples of 5000 words each. The corpus data was all on paper and indexed on file cards. (Corpus Linguistics: An Introduction for A-level Teachers, 2017)

Besides, the American Dialect Society is not the only professional association which organizes the annual word-of-the-year vote popularly known as WOTY. For example, the winner in the year 2012 was the word *#hashtag*. (Hashtag is the 2012 Word of the Year American Dialect Society, 2013.) New words emerge and gradually establish themselves in every language. Usually, they are a reaction to specific innovations. Consequently, the process of their codification in different types of dictionaries can start.

All this would not be possible without the meticulous work of lexicographers, i.e. specialists whose job is to create dictionaries which can be monolingual or bilingual. They can be classified based on different criteria and designed for different types of dictionary users.

The objective of this paper is to examine individual phases, methods and workflows typical for the process of creating a technical dictionary. On the background of literature review the author will provide rudimentary guidelines to all tasks *involving planning, resourcing and compilation of reference materials*. The author is primarily concerned with the role of new technologies serving the teams of lexicographers, boosting the efficiency of their work and reducing costs. The paper is complemented by examples of a primary data analysis consisting of financial markets' terminology and its codification within the Czech language lexis and environment.

### **Literature review and methodology**

When in 2008 Sue Atkins and her colleague Michael Rundell published their book *The Oxford Guide to Practical Lexicography*, it was enthusiastically welcomed by all lexicographers, teachers of lexicography, and their students all over the world. This inspiring university textbook takes readers through the process of designing, collecting, and annotating a corpus of texts. The book represents an ideal combination of 'how to do it' approach with the application of recent linguistic theories. Since its publishing, the author of this paper has been relying on this material written by renowned professional lexicographers and uses the methods and techniques recommended by its authors in the process of designing and preparation of specialized dictionaries and glossaries in her tertiary teaching practice. In recent years, also Czech linguists published studies on lexicology and lexicography, e.g. the team of authors *Petra Adámková et al.*, under the auspices of Palacký University Olomouc, published a collective monography *Studie k moderní mluvnici češtiny: Dynamika českého lexika a lexikologie / Study on Modern Czech Grammar: Dynamism of Czech Lexis and Lexicology*, which includes the chapter dealing with word-formation and neology as well as the chapter focusing on language internationalization. Last but not least, the author of this paper studied and carefully analysed the approaches and practical advice written by prof. PhD. Rostislav Kocourek – a renowned Czech Anglicist, philologist, and linguist, in his monography titled *K metodě zpracování dvoujazyčného odborného slovníku / A Method of Producing Bilingual Technical Dictionaries*.

The lexicographic methods and approaches explicated in the above-mentioned publications are *terminus a quo* for anyone considering the professional path of a lexicographer and/or for all subject matter experts intending to create their own (specialized) dictionaries. As a linguist and ESP<sup>6</sup> teacher, the author of this paper is fully convinced that it is of utmost importance to diffuse the knowledge and skills how to create a specialized dictionary if we really mean to enhance the

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<sup>6</sup> ESP = English for Specific Purposes

quality of technical subjects' instruction at tertiary level education. This fact was the most motivating element for the author to prepare this paper.

On the background of literature review, the main scientific methods used in elaborating the paper involve content analysis, synthesis, generalization and primary data analysis based on lexicographic sample data consisting of current professional terminology used in financial markets.

### **What lexicographers do**

The Czech lexicography has a very long tradition going back to the 13th century. Its birth was motivated by a practical effort to understand written foreign language texts. Its modern history dates back to the time when Josef Jungmann published his five-volume *Czech-German Dictionary*, i.e. in the period from 1834 to 1939. In this dictionary, Josef Jungmann reached an impressive volume of entries on 4694 pages.

A specialized dictionary is referred to in English as a *technical dictionary* (in German as a *Fachwörterbuch*). These dictionaries cover the terminology of a particular discipline or subject field (single-field dictionary, multi-field dictionary, sub-field dictionary). Specialized dictionaries have different functions, i.e. cognitive functions, communicative functions, and practical functions. (Fuertes Olivera, c2010, p. 52)

The following subchapters examine the individual stages of the job of creating a dictionary.

### **Planning the dictionary**

Dictionaries are not born every day and they are really not cheap to produce. Typically, there is the following sequence of events:

- The marketing department spots a gap on the booksellers' shelves.
- The marketing department specifies the type of dictionary, identifies the market and the type of user.
- The eventual selling price is proposed.
- The budget, schedule, resources are stipulated and personnel recruited.
- The budget and schedule are passed to the editorial department where the dictionary is designed and developed.
- As a rule, the needs of the end-user determine the extent of the book and its content. (Atkins, 2008, p. 18)

Writing a dictionary is usually teamwork. The styling of entries is specified and consequently the style guide is necessary to prepare as each member of the team has to follow the same guidelines. The style guide has to be very precise and determine the precise designation of recurring elements, i.e. British English as *BrE*, American English as *AmE*, etc. Nowadays, the style guide is an electronic document, typically easily accessible via intranet.

For bilingual technical dictionaries many other aspects have to be included into the style guide, e.g. how to deal with items that have no direct target-language equivalent, how to deal with abbreviations, plural nouns or cross-references, how to write words with consonant-doubling (travelled vs. traveled), or how to deal with inter-cultural issues. (Atkins, 2008, p. 119-120) It is virtually impossible to capture all situations a lexicographer might encounter. However, a style guide can be designed as a 'self-healing document' if all members of the team have an access to the same communication platform to exchange ideas and proposals for their solutions. Of course, there should be one person only with the authority to make the final decision.



### **Preparation stage and dictionary-writing process**

Professor R. Kocourek recommends the following steps to be taken in the preparatory stage of creating a dictionary. (Kocourek, 1966, p. 65-68)

The focus of dictionary creation lies in *semantic research*, i.e. the work with the meaning of technical terms and phrases. For a lexicographer, to manage the process of a technical dictionary creation, at first he must obtain at least a general knowledge of the subject matter which is referred to by technical terminology. Therefore, the first stage involves the study of the given field. Bibliography review of technical literature written both in the source and target languages as well as evaluation and selection of representative resources are part of this process. Attention has to be paid to proportional representation of individual subdisciplines of the field. Individual resources selected for excerption works have to be of excellent expert quality and written in a refined language.

*Selection of texts suitable for excerption* is the second step of the pre-lexicography stage. A carefully selected text is the core of any lexicographic work, i.e. a text both in the source language and the target language. These texts will serve as the source of entries. Future end-users of the arising dictionary should be also involved in the selection process. In the selection process it is advisable to consult the suitable texts with key experts of the particular field. The selection process may be relatively short; however, elaboration of the chosen texts may take even a couple of years. Therefore, texts describing recent development / innovations of the particular scientific discipline are more than welcomed.

*Work with semantic resources* is another important part of a lexicographer's work. The excerption work provides a number of dictionary entries compiled and entered into a *database holding the material recorded during the corpus analysis process*. (Atkins, 2008, p. 317). However, the original text must be complemented by definitions, further clarification of terminology, or even illustrative examples, charts, visuals, or even audio visual aids. It is advisable to assign this task to one member of the lexicographic team.

*Division of texts into parts* is another important step to take. Experience shows it is more practical to number sentences or parts of the text rather than pages and lines due to the need of correlation between parts of the text in the source language and target language.

*Translation of the texts into the target language and excerption of unclear and ambiguous terms* is a reliable method of verification of equivalents. If the translation is coherent, it is a guarantee that future users of the dictionary will be able to create their own translations easily. (Kocourek, 1966)<sup>7</sup>

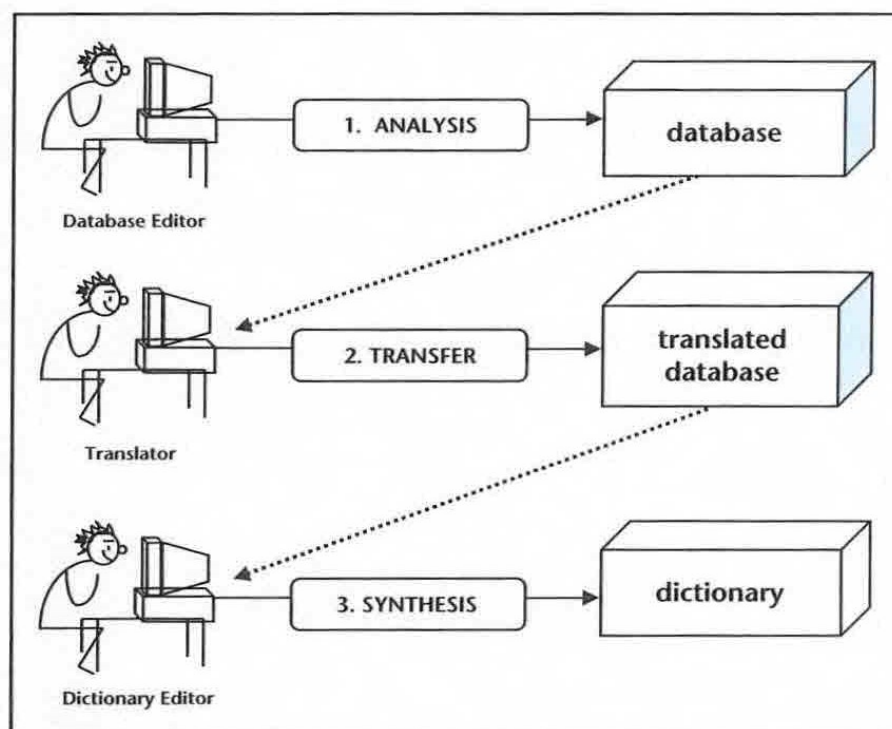
There are many other steps and decisions to be taken concerning different tasks the teams of lexicographers undoubtedly face, e.g. decisions on alphabetical order, polysemy, homonymy, synonymy, neology, and neo semantics etc. just to name a few. E.g. neo semantics deals with new meanings of the already existing collocations. (Adámková, 2013, p. 108) In financial markets, we have 'a black swan' that serves as a perfect example of neo semantics. Taking into account that every member of the team is unique and excels more in certain tasks, there is a

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<sup>7</sup> Translation: author

practical suggestion how to use the talents of lexicographers to the best advantage and assign tasks to individual team members working on a bilingual technical dictionary – see Fig. 1.

**Table 1: From corpus to bilingual dictionary: the threefold process**



Majority of newly emerging technical dictionaries need the team of lexicographers to start from scratch and work systematically from corpus to dictionary. It is given by the current dynamic development of every field of human activity bringing about numerous innovations waiting to be called by a name.

In practice, the above-mentioned work-flow process is complemented by a number of different small tasks helping to accomplish the complex job of creating a dictionary, incl. the responsible work of editors, graphic designers, proof-readers etc. The full description goes far beyond the limited extent of this paper. However, every member of a lexicographic team performs his role and without the hard work of the team as a whole the dictionary would never be born.

### **Cloud technologies serve lexicographic teams**

As mentioned above, the author is primarily concerned with new technologies which can be utilized in setting up the work environment of a lexicographic team which might consist of even twenty lexicographers or more. Based on the author's own many-year experience, the use of shared communication platforms is highly recommended, e.g. Google Docs / Google Sheets and/or Google Slides. Google Docs can be described as a web-based editing program that allows users to create, share and edit documents through a secure networked system. For the job of creating a dictionary approx. up to the extent of 2,000 entries, Google Sheets can be used successfully. For dictionaries of great extent, specialized software programmes are needed. Multiple users can work in the cloud application on the same document in real time and edit its content from any location in the world with Internet access. User-friendly environment, ease of use, and cost-effectiveness are logical criteria supporting the idea of shared work environment using cloud applications. Economies of time are worth mentioning as some lexicographers can

still be working on their entries starting by a letter of alphabet which has not been finished yet while others can already work on proofreading of the finished entries. Thus, shared work environment significantly help keeping up the deadlines. Supplementary chat can boost fast information exchange while team members can clarify the content and individual entries of the dictionary within the same application. Finally, there is an option to export the finished content in different formats for final editing. Thanks to cloud solutions, productivity goes up and labour costs down.

### Financial markets' terminology codification

In order to illustrate the work of a lexicographic team consisting of a subject matter expert on financial markets, a linguist, a graphic designer, and an editor/IT specialist, this chapter presents sample data selected from the latest e-dictionary dealing with financial markets' terminology available on our market. English-Czech and Czech-English Glossary of Financial Markets' Terminology (further on referred to as 'Glossary' only) by Vladislav Pavlát and Ladislava Kniňová was published in April 2017. The e-dictionary comprises almost 1,200 entries covering both traditional and modern terminology of financial markets. The dictionary is designed in the form of an interactive PDF with interactive alphabet letters - see Fig. 2:

Figure 1:


A	B	C	D	E	F	G	H	I	J	K	L	M
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
<b>A</b>												
abnormal returns						abnormální výnosy						
accounting treatment for securities						úctování cenných papírů						
adequacy of sanctions						přiměřenost sankcí						
adverse selection						nepříznivý výběr						

On the course of elaboration of the Glossary, the lexicographic team had to overcome numerous obstacles. Here are few examples.

**Situation 1:** Differences between British and American English had to be constantly monitored, researched and verified.

dividend-bearing shares	akcie vynášející dividendu (BrE)
dividend-paying stock	akcie vynášející dividendu (AmE)

**Situation 2:** Czech Equivalent needs explanation as the literal translation is not sufficient to understand the meaning fully (here, the term falls into the category of neo semantics).

<b>F</b>	
fallen angel	padlý anděl (dluhopis, jehož původní investiční rating byl vysoký, ale od té doby stále klesá až k druhotnému dluhopisu)

**Situation 3:** Czech Equivalents of Abbreviations and Acronyms also needed a very careful verification, especially in case of international institutions.

ICSD	International Central Securities Depository Mezinárodní centrální depozitář cenných papírů
IFRS	International Financial Reporting Standards Mezinárodní standardy účetního výkaznictví
IOSCO	International Organization of Securities Commissions Mezinárodní organizace komisí pro cenné papíry
IPO	Initial Public Offering počáteční veřejná nabídka

Based on the carefully selected professional literature, the authors of the Glossary compiled a huge amount of data related to financial markets' terminology, carried out primary data analysis, selection of terms and their curation with the highest precision and attention to detail with the aim of their codification within the Czech language lexis and environment. The Glossary with authentic and state-of-the-art data captures the spirit of financial markets of today. It is designed to help knowledge transfer; however, it is more than obvious that it will have to be regularly updated hand in hand with the dynamic developments in the world of investors and financial markets.

### Conclusion

The objective of this paper was to examine individual phases, methods and workflows typical for the process of creating a technical dictionary. The suggested methods may seem laborious; however, several positive features of the process can be identified. The principal ones consist in the fact that only relevant words occurring in specialized discourse will find their way into the dictionary; dictionary entries are exemplified by citations and data included in the dictionary can be verified any time. (Kocourek, 1966, p. 84) The database holding the material recorded during the corpus analysis process can serve to a variety of uses in teaching, research, and compiling new entries for future updated versions of dictionaries.

There is no doubt that the job of creating a technical dictionary is rather complex. It requires interdisciplinary approach and constant interest in the specific field development, including innovations. Lexicographers closely collaborate with linguists and rely on linguistic theory to which many contemporary improvements in the structure and conception of dictionaries can be attributed. Simultaneously, new technology plays a dominant role in the emergence of e-dictionaries with various useful and engaging features (interactive PDF - hyperlinks, pronunciation of entries – online, integrated directly into the PDF, or on an enclosed CD-ROM, etc.). Electronic dictionaries already exist in the form of mobile applications, e.g. Oxford

Advanced Learner's Dictionary (OALD) or Oxford Learner's Dictionary of Academic English (OLDAE). Last but not least, high expectations can be observed among future dictionary users concerning the graphic design. All these requirements will have to be taken into consideration in the process of building a team of lexicographers complemented by other specialists ranging from IT specialists, mobile app designers up to graphic designers. Only a very complex approach will guarantee meeting the ever increasing expectations and demands of future dictionary users.

The author of this paper is fully convinced that dissemination of knowledge on how to write a technical dictionary is critically important to all academia and other professionals as no scientific discipline can develop properly without taking care of its professional terminology. Both tertiary level education and business practice will benefit from regularly updated technical dictionaries and their electronic versions. Consequently, communities of experts will communicate smoothly with their foreign partners to the benefits of all.

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# AFRICAN REGIONAL ECONOMIC COMMUNITIES ON THE WAY TO THE CONTINENTAL FREE TRADE AREA

EVA KOVÁŘOVÁ

## Abstract

This paper deals with regional integration cooperation in Africa, its achievements and actual challenges. Today, there are more regional economic communities (RECs) in Africa than in other regions of the world economy. Although real benefits of African RECs are limited by some specifics of Africa, they are planned to be the building blocks for the Continental Free Trade Area. The African Union should introduce this area by the end of the year 2017. The aim of this paper is to map the status and perspectives of major African RECs (with special emphasis on their achievements in the field of trade integration), and to evaluate their potential for the formation of the Continental Free Trade Area.

## Keywords

Africa, Continental Free Trade Area, Integration, Intra-regional Trade, REC

## JEL Classification

F1, F14, F15

## Introduction

Africa is the second largest and the second most populous continent – it has more than 1,000 million inhabitants. Africa has been in the long-term the lowest-income and most underdeveloped region of the world economy with a marginal share in the world GDP and influence on the international economic order. In 2015, its share in world output was about 3%, in world exports about 2%, and in world FDI inflows about 3%. Some African countries have belonged to the fastest growing countries in the world since the beginning of the new millennium.<sup>8</sup> However, their economic growth seems to be non-inclusive and to be heavily dependent on the performance of developed countries' markets. Their positive growth-trajectory had close link to the increasing prices of oil and other raw materials that they usually exported to the global markets. Since 2011, global prices of primary commodities have declined and have affected the growth-trajectory of Africa's export-oriented countries. Some economists, e.g. Joseph Stiglitz, argue that greater south-south trade, and intra-regional trade as its most significant part, can help to overcome dependence on exports of raw materials and boost further socio-economic development of the world's poorest countries.

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<sup>8</sup> In the period 2001-2010, Angola, Nigeria, Ethiopia, Chad, Mozambique and Rwanda belonged to the top10 fastest growing countries. In the period 2011-2015, Ethiopia, Mozambique and Nigeria confirmed their economic growth-trajectory and were jointed in the top10 countries by Tanzania, Congo, Ghana and Zambia (United Nations, 2016).

Traditionally, Africa's intra-regional trade is lower than that of other developing regions despite existing regional economic communities (RECs) that have been focused on trade integration since their foundation. Low trade integration within the RECs and outcomes of intra-African trade are caused by several reasons, especially low countries' production and export complementarity, low economic and political stability, poor institutional quality and insufficient physical infrastructure. Analysts also argue with ongoing dependence on markets of more developed countries that is strengthened with various agreements concerning the preferential access to these markets. Although real benefits of African RECs fall behind their potential, they are planned to be the building blocks for the Continental Free Trade Area.

### **1. Research Problem Formulation**

In Africa, there are more regional economic communities (RECs) based on inter-state formal framework of cooperation than in other regions of the world economy. Nowadays, eight African regional economic communities (RECs) try to consolidate and accelerate their economic integration in the field of trade because the African Union recognizes them as the building blocks for the pan-African economic integration that should be formed in the first step as the Continental Free Trade Area (CFTA) by the end of the year 2017. However, latest data show that the planned deadline will not be probably met and the final step in pan-African economic integration – establishment of the African Economic Community is still more or less the vision than the real target.

The aim of this paper is to map the status and perspectives of major African RECs (with special emphasis on their achievements in the field of trade integration), and to evaluate their potential for the formation of the Continental Free Trade Area. Research results presented in our paper are based on the review of relevant sources - original historical documents, scientific papers and actual reports monitoring progress in economic integration in Africa; as well as on analysis of available statistical data concerning the intra-regional trade in Africa.

In order to meet the aim of our paper, we take specific steps of our analysis that can be structured as follows:

1. We describe the formal framework of regional economic integration and its link to the pan-African integration.
2. We map the actual integration status of eight most important RECs.
3. We try to identify the level of Africa's intra-regional trade and intra-community trade of the RECs.
4. We conclude our paper with the indication of perspectives for the Continental Free Trade Area establishment.

We consider our paper as one part of the theoretical basis of our research that we focus on integration of sub-Saharan economies into the global economy and their economic relations with the EU.

### **2. Research Problem Solution**

Generally, regional economic integration is widely recognized as the engine for socio-economic development and structural transformation of African countries. Today, there are more regional economic communities (RECs) in Africa than in other regions of the world economy. First African regional integration initiative has a long history, dating back to the establishment of the South African Customs Union in 1910. The real expansion of regional integration started later - in the 1970s and occurred in two stages. First stage is dated to the mid-1970s and the early 1980s, and the second one to the 1990s. Each regional economic community has developed

individually and has its own rules and structure. Generally, RECs follow purpose to facilitate economic integration on regional level. However, the integration existing within their frameworks is not always sufficient, efficient and benefit.

### **2.1 African RECs as the Building Blocks for the Continental Economic Integration in Africa**

History of African regionalism has the link to several important events. First, the establishment of the United Nations Economic Commission for Africa (UNECA) in 1958 that was founded with the aim to promote the economic and social development of newly independent African states. Then, followed with the establishment of the Organization of African Unity (OAU) in 1963. The OAU opened the venue for further political and economic cooperation. Parallel to the foundation of the OAU, some African leaders agreed on the formation of the African Development Bank Group. Later, first economic integration projects were launched.

Several other initiatives resulted in the introduction of the Lagos Plan of Action for Economic Development of Africa (LPA), prepared for the period 1980-2000 by the OAU with the aim, inter alia, to boost efforts in regional economic integration. The Annex I of the LPA – so-called Final Act of Lagos – called, with respect to previous resolutions and declarations, for the formation of the African Economic Community in successive stages within 15 to 25 years. Annex's second part says, *we reaffirm our commitment to set up, by the year 2000, on the basis of a treaty to be concluded, an African Economic Community, so as to ensure the economic, social and cultural integration of our continent.*

African leaders translated the LPA's commitments into the concrete form in 1991 when the Abuja Treaty establishing the African Economic Community (AEC) was signed. This Treaty introduced the notion that the regional economic communities would be the building blocks for the AEC, *the Community shall be established mainly through the co-ordination, harmonisation and progressive integration of the activities of regional economic communities* (Abuja Treaty, Chapter XIX). Treaty also set out that the Community would be established gradually in six stages of variable duration over a transitional period not exceeding thirty-four years.

Both documents – the Lagos Plan of Action and the Abuja Treaty – confirmed importance of regional economic communities for pan-African economic integration that was later strengthened by the transformation of the Organization of African Unity into the African Union (AU) with respect to the Sirte Declaration. African leaders decided to establish an African Union in conformity with the objectives of the OAU Charter and with the provisions of the Abuja Treaty establishing the AEC. They also declared that the implementation periods of the Abuja Treaty would be shortened and the RECs would be strengthened and consolidated for achievement of the objectives of the AEC (Sirte Declaration, 1999).

The Constitutive Act of the AU was adopted in 2000 and entered into force in 2001. Nowadays, the African Union creates the most comprehensive cooperation of all 55 African states.<sup>9</sup> The

African Union has introduced yet 14 objectives of its activities, some of them have close relation to regional and continental integration (Constitutive Act of the AU, Article 3):

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<sup>9</sup> Morocco re-joined the African Union in the first months of the year 2017.



- *to accelerate political and socio-economic integration of the continent,*
- *to coordinate and harmonize the policies between the existing and future RECs for the gradual attainment of the objectives of the Union.*

The Constitutive Act of the African Union confirms commitments regarding the establishment of the African Economic Community and expresses conviction of the need for acceleration of the implementation of the Abuja Treaty *in order to promote the socio-economic development of Africa and to face more effectively the challenges posed by globalization*. In 2015, member states of the African Union adopted strategic document Agenda 2063 that is both vision and action plan for next development of Africa over the period of 50 years. This document confirms pan-African principal vision of *an integrated, prosperous and peaceful Africa* and presents seven aspirations. The second aspiration states, *an integrated continent, politically united and based on ideals of Pan-Africanism and the vision of Africa's Renaissance*, and includes the fundamental economic target; *Africa shall be a continent where the free movement of people, capital, goods and services will result in significant increases in trade and investments amongst African countries...* (Agenda 2063).

Plan establishing the Continental Free Trade Area (CFTA) was introduced as one of the AU flagship projects and initiatives approved by the AU Summit launched in relation to the Agenda 2063. The African Union adopted decision concerning its establishment in January 2012. It was set that the Continental Free Trade Area would be formed by an indicative date of the year 2017. The CFTA should bring together 55 African countries with more than one billion inhabitants and total GDP of more than USD 3.4 trillion. The main objectives of the CFTA are to create a single continental market for goods and services, with free movement of businesspersons and investments and to open the way for accelerating establishment of the customs union. One of the CFTA objectives is focused on expansion of intra-African trade through better harmonization and coordination of trade liberalization and facilitation regimes and instruments across RECs and across Africa in general (African Union, 2017).

Why does Africa need the CFTA? Traditionally, Africa is one of the most marginalized regions of the world economy that suffers from structural and economic imbalances, political instability connected with frequent civil wars and ethnic conflicts. Economic integration within the CFTA framework could help to build more prosperous, more competitive and more diversified future for Africa through stimulation of trade, growth and development. It could remove obstacles for development imposed by small economies of African countries and their traditional export-orientation on markets of more developed countries. However, CFTA will strength certainly the economic position of countries with large productive capacity and competitiveness but it can hit economic position of the small ones because of the cut of customs duties revenues and increased competition.

## **2.2 Mapping of the Current Integration Status of African RECs**

As the Abuja Treaty declared, the African RECs form the basis for pan-African economic integration. Nowadays, the African Union recognizes eight RECs (see Table 1) as the building blocks for the African Economic Community.

**Table 1: Regional Economic Communities in Africa**

Regional Economic Community	Establishment	Members
Arab Maghreb Union (UMA)	1989	Algeria, Libya, Mauritania, Morocco, Tunisia
Common Market for Eastern and Southern Africa (COMESA)	1993	Burundi, Comoros, DR Congo, Djibouti, Egypt, Eritrea, Ethiopia, Kenya, Libya, Madagascar, Malawi, Mauritius, Rwanda, Seychelles, Sudan, Swaziland, Uganda, Zambia, Zimbabwe
Community of Sahel-Saharan States (CEN-SAD)	1998	Benin, Burkina Faso, Cabo Verde, Central African Republic, Chad, Comoros, Côte d'Ivoire, Djibouti, Egypt, Eritrea, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Liberia, Libya, Mali, Mauritania, Morocco, Niger, Nigeria, São Tomé and Príncipe, Senegal, Sierra Leone, Somalia, Sudan, Togo, Tunisia
East African Community (EAC)	1999	Burundi, Kenya, Rwanda, Uganda, South Sudan, Tanzania
Economic Community of Central African States (ECCAS)	1983	Angola, Burundi, Cameroon, Central African Republic, Chad, Congo, Democratic Republic of Congo, Equatorial Guinea, Gabon, Rwanda, São Tomé and Príncipe
Economic Community of West African States (ECOWAS)	1975	Benin, Burkina Faso, Cabo Verde, Côte d'Ivoire, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, Togo
Intergovernmental Authority on Development (IGAD)	1997	Djibouti, Eritrea (currently suspended), Ethiopia, Kenya, Somalia, South Sudan, Sudan, Uganda
Southern African Development Community (SADC)	1992	Angola, Botswana, DR Congo, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia, Zimbabwe

Source: African Union (2017)

African RECs were designed with the aim to promote cooperation amongst participating countries in various fields. Generally, all of them aimed in promotion of socio-economic development, strengthening of peace, security and stability. However, they declared already at the time of their foundation some ambitions in the field of economic integration. AMU declared the aim to promote free movement of goods, services, people and capital. COMESA wanted to become the free trade region. EAC aimed in wider and deeper cooperation among partner states. ECCAS wanted to form economic and monetary integration. ECOWAS formulated its primary objective as the promotion of economic integration. IGAD was founded with the aim to promote development of its members, and economic cooperation and integration in the region (and also to promote realization of the objectives of COMESA and EAC). SADC followed the aim of development through the regional integration.

Objectives and aims of nearly all African RECs are very ambitious with regard to political, economic, social, structural and instructional challenges that they member states face. Therefore, majority of RECs lag behind their targets and show disappointing results in negotiations or implementations of declared commitments. Analysts consider various factors as the most important barriers for the fulfilment of RECs' plans. Generally, the most important ones are:

- poverty and significant differences in economic development amongst participating countries (Carmignani, 2003);
- poor governance, weak infrastructure, poor institutional quality (Osabuohien, Efobi, 2011);
- wavering political support, political instability and inter-state border disputes and wars; smaller states' suspicion of the demographic and economic giants (Adepoju, 2007);
- poor participation of private sector (Geda, Kibret, 2008);

- non-sharing integration visions by the civil society and ordinary people.

Great challenge for deeper regional integration poses also the overlapping membership of RECs, etc. many African countries belong to more than one REC. It is one of the most important phenomenon occurring in African regionalism. In fact, only ten African countries are members of only one regional grouping. These are Angola, Botswana, Congo, Equatorial Guinea, Lesotho, Namibia, South Africa, and South Sudan. Majority of 55 African countries are members of two RECs. Burundi, Democratic Republic of Congo, Djibouti, Eritrea, Libya, Rwanda, Sudan or Uganda are members of three RECs and Kenya participates even on four regional groupings.

### 2.3 Evaluation of the Trade Integration and Intra-Regional Trade Outcomes of African RECs

Trade integration – in terms of free movement of goods and services – is the regional integration priority across all RECs. Therefore, they launched many trade arrangements in the 1990s and 2000s, focused on removal of tariff and non-tariff barriers, as well as on simplification of customs procedures. They have made significant effort but real progress is slow. Some RECs still struggle to establish their free trade agreement (FTA), while others are either partial FTA or partial customs union (see Table 2). According to the Abuja Treaty, all RECs should establish free trade areas and customs unions by the end of the year 2017.

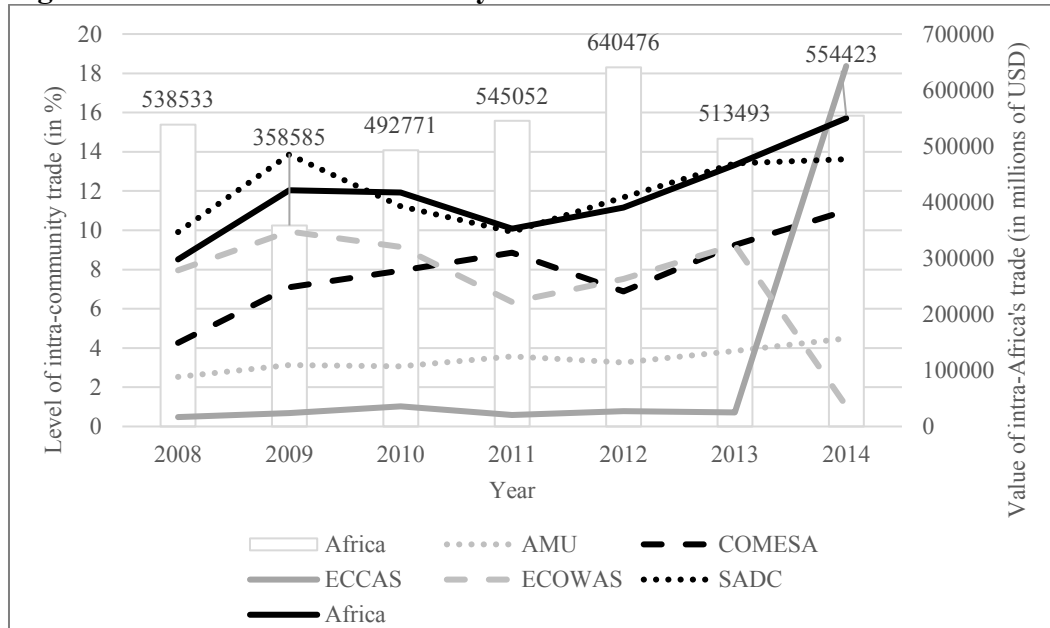
**Table 2: Formal Trade Arrangements (October 2015) and Trade integration index (2016)**

REC	Formal Trade Arrangements	Trade integration index
AMU	Negotiations on free trade area	0,631
COMESA	Free trade area in operation	0,572
CEN-SAD	Formation of the free trade area	0,353
EAC	Customs union in operation	0,780
ECCAS	Implementation of free trade area	0,526
ECOWAS	Customs union in operation	0,442
SADC	Free trade area in operation	0,508

Note: Scores of Trade integration index are calculated on a scale 0 (low) and 1 (high).

Source: UN Economic Commission for Africa, African Union, African Development Bank Group (2016a, 2016b)

Outcomes of the intra-regional trade are poor when we compare Africa with other developing regions of the world economy. Jordaan (2014) shows that the high level of regional integration within Africa does not necessarily stimulate intra-Africa trade to the expected levels. In long-term, intra-Africa's trade accounts on average for about 10 percent of its total trade, meanwhile e.g. the intra-regional trade of South-East Asia reaches 25 percent. See the levels of intra-community trade of African RECs and total intra-Africa's trade in Figure 1.

**Figure 1: Level of intra-community trade of Africa's RECs and total intra-Africa's trade**

Source: African Development Bank Group, African Union Commission, UN Commission for Africa. African Statistical Yearbooks (2010, 2011, 2012, 2013, 2014, 2015, 2016), own data processing

Levels of RECs' intra-community trade presented in Figure No. 1 are stable. The Southern African Development Community (SADC), followed by the Common Market for Eastern and Southern Africa (COMESA) and the Economic Community of West African States (ECOWAS), reached the highest average level in the period 2008-2014. Sharp decrease of ECOWAS intra-regional trade, which we observed when we analysed data presented in the African Statistical Yearbooks, was not confirmed by additional observation based on the United Nations Conference on Trade and Development (UNCTAD) database. UNCTAD does not monitor intra-regional trade within existing RECs but within five defined African sub-regions: Eastern Africa, Middle Africa, Northern Africa, Southern Africa and Western Africa (see Table 3). However, except Mauritania, all Western African countries as the UNCTAD identifies them are members of ECOWAS.<sup>10</sup>

<sup>10</sup> We could not do the same additional observation for ECCAS sharp growth of intra-community trade because UNCTAD does not include Burundi and Rwanda into the group of Middle Africa.

**Table 3: Intra-regional trade in specified countries' groups (in percent of total trade)**

Regional countries' group	2008	2009	2010	2011	2012	2013	2014
Eastern Africa <i>Burundi, Comoros, Djibouti, Eritrea, Ethiopia, Kenya, Madagascar, Malawi, Mauritius, Mozambique, Rwanda, Seychelles, Somalia, South Sudan, Uganda, Tanzania, Zambia, Zimbabwe</i>	14,06	14,32	12,96	13,68	14,37	14,10	13,68
Middle Africa <i>Angola, Cameroon, Central African Republic, Chad, Congo, DR Congo, Equatorial Guinea, Gabon, São Tomé and Príncipe</i>	0,93	1,46	1,63	1,60	1,35	1,23	1,01
Northern Africa <i>Algeria, Egypt, Libya, Morocco, Sudan, Tunisia, Western Sahara</i>	3,35	4,45	3,84	3,70	4,13	5,01	5,28
Southern Africa <i>Botswana, Lesotho, Namibia, South Africa, Swaziland</i>	2,75	3,20	14,47	12,45	13,80	14,12	14,85
Western Africa <i>Benin, Burkina Faso, Cabo Verde, Côte d'Ivoire, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Saint Helena, Senegal, Sierra Leone, Togo</i>	9,68	9,90	8,24	6,45	7,47	9,19	8,25

Source: United Nations Conference on Trade and Development. UNCTADSTAT (2017), own data processing

One of the causes of low level of intra-regional trade in Africa is traditional protectionism applied in trade policies of some African countries. Two thirds of African countries are either more protectionist than Africa on average or have more limiting market access conditions (see Table 4).

**Table 4: Applied tariffs and liberalized tariff lines within African RECs**

REC	Average applied tariff on imports from other members of the REC	Share of fully liberalized tariff lines
AMU	2,60 %	49 %
COMESA	1,89 %	55 %
CEN-SAD	7,40 %	N/A
EAC	0,00 %	100 %
ECCAS	1,86 %	34 %
ECOWAS	5,60 %	10 %
IGAD	1,80 %	22 %

Source: UN Economic Commission for Africa, African Union and African Development Bank Group (2016a)

African policy-maker Makhtar Diop (the World Bank Vice President for Africa and former Senegalese Minister of Finance) explains that protectionist barriers are hard to remove because various interest groups support them or revenues from customs duties create significant sources for public budgets of poor countries. Because of many existing agreements concerning trade liberalization adopted between African and more developed countries, it is explained that it is cheaper to export to these non-African countries than to countries lying in the same sub-region. According to the UNCTAD's Report published in 2009, only 7 out of African countries had their main export markets and 25 their second main market in Africa (cited in Draper, Morisho Mwana Biningo, 2015).

Various studies focus on identification of further obstacles for higher intra-community trade of the Africa's RECs. Hartzenberg (2011) says that African countries are not only poor and small, but also landlocked with low densities of rail and road infrastructure, which causes high transportation costs. In addition, they usually suffer from the lack of skills and capital. Osabuohien and Efobi (2011) consider the insufficient complementarity and diversification of production structure, high production costs and low diversification of trade as the most important constrains for intra-regional trade in Africa. Djoumessi and Bala (2016) suggest reduction of the traditional reliance on more developed countries as trading partners for the promotion of intra-African trade. The United Nations Conference on Trade and Development (2015) notes that Africa's poor intra-regional trade performance hides the fact that such trade could increase substantially if some key constraints, particularly infrastructure-related, were addressed.

### **Conclusion**

What are the perspectives of the CFTA established like? Páez (2016) explains that considerable progress has been made, with the official launch of the CFTA negotiations in June 2015 but she looks critically at what is being considered in the negotiations of the CFTA in terms of objectives, scope, disciplines and timelines. In addition, most RECs lag behind their own targets' time schedules and they do not meet deadlines set for the trade liberalization agreed by the pan-African authorities. Therefore, in our opinion, it is more than likely that the deadline of the CFTA constitution will not be met. However, the first step towards the CFTA was taken. The most ambitious African trade integration project was introduced in 2008 when leaders of COMESA, EAC and SADC agreed to negotiate a Tripartite Free Trade Area Agreement (TFTA). They planned TFTA to become the building block for the Continental Free Trade Area. In June 2015, 24 leaders of 26 potential member states agreed the TFTA.

Countries participating on the TFTA collectively represent 620 million consumers (etc. nearly 60 % of Africa's population) and aggregate output of almost 1.2 trillion USD. However, negotiations on TFTA showed how many challenges have to be solved in negotiations led amongst very heterogeneous countries. Nowadays, only 18 member countries, namely Angola, Burundi, Comoros, Democratic Republic of Congo, Djibouti, Egypt, Kenya, Libya, Malawi, Namibia, Rwanda, Seychelles, Sudan, Tanzania, Uganda, Swaziland, Zambia and Zimbabwe have already signed the TFTA Agreement. So far, only eight countries have ratified it (by the 31 March 2017). For entry into force, 14 ratifications are necessary. The CFTA will build on the success of TFTA but on the other hand, slow progress in TFTA implementation poses threat for the CFTA negotiations. We can discuss if it is, in short-time perspective, possible to combine eight diverse RECs that do not meet their commitments and lag behind their own targets' time schedules.

Analysts highlight that functional CFTA could help to solve problems with African underdevelopment, fragility, vulnerability and overall instability, and could improve its position in the world economy. However, many challenges, in economic, political, institutional and capacity building terms, indicate that much work has to be done for successful launch of the African Continental Free Trade Area despite long-lasting strong economic and political support. Mr. Abdalla Hamdok, Executive Secretary of the United Nations Economic Commission for Africa, explains: *The big question is, can Africa surprise the world by delivering the CFTA by the end of 2017 as anticipated and also doubling intra-African trade within this decade? The state of play within the RECs and empirical work at Economic Commission for Africa suggest that both are achievable. But for this to happen, there is need to fast track the implementation strategy, including decisions on processes and mechanisms.*

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# TAXATION OF FINANCIAL INSTITUTIONS IN THE CZECH REPUBLIC

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## Abstract

Financial institutions show high added value in individual industries of national economy. Therefore, their taxation in many developed countries is set differently to other tax entities. The reason of this attitude is both the fast concentration of profits and bailout, in particular of banks, from public funds in times of financial crises. In the Czech Republic, a very high support provided to some financial products from the state budget and an ability to apply tax relief by citizens who obtain them contribute to the growth of bank's liquidity. The aim of this paper is to design changes in the taxation of financial institutions in the Czech Republic based on an analysis and international comparison.

## Keywords

Financial institutions, income tax, value added tax, Financial Transaction Tax, Financial Activity Tax.

## JEL Classification

G2, H2

## Introduction

Financial institutions are business corporations providing financial services and offering financial products to both private and public sectors under a licence granted by the Czech National Bank. In order to secure currency stability, activities of these institutions are regulated by the state through its central bank. However, there is neither a single definition nor classification, as they differ by their specific use. For example, according to the methodology of the Czech Statistical Office, financial institutions are a set of banking monetary institutions, non-banking monetary institutions keeping their books as banks or entrepreneurs, investment companies and funds and also financial lease companies. From the list above, the paper will only deal with banks, as they represent the most significant subset with regard to many of the analysed indicators.

The financial institutions in the Czech Republic are taxed similarly to other business entities. A special attention will be paid to the most important taxes - income tax and value added tax.

It is generally recognised that the banking sector posts high added value in individual industries of national economy in almost every developed country. Many governments thus make an effort to slow down this concentration of wealth, usually through different taxation regimes to other tax entities. The fact that financial institutions or the financial products obtained by citizens from them are supported by state in many countries is another reason. The public funds thus significantly increase the liquidity of financial institutions that manage these funds even for several decades.

For the reasons above, we may ask ourselves to what extent these profits should be taxed to avoid both destabilisation of the banking system and bolster income of public budgets of indebted economies. A special situation exists in countries where the banking sector is significantly internationalised and the revenues are "drawn off" by parent companies based abroad. This is also the situation of the Czech Republic which is confirmed by the Analysis of income drain in 2016 prepared by the Office of the Government of the Czech Republic in this year spring.

The aim of this paper is to design changes in the taxation of banking institutions in the Czech Republic based on an analysis and international comparison. To achieve this, general scientific descriptive methodologies, i.e. description and information classification, reflected in the definition of a specific subset of financial institutions in the monitored period from 2008 to 2015, and methods of comparative synthesis and analysis, were applied. With regard to more specific scientific methodology, mathematical-statistical methods of indexing and correlation analysis were used. The documents of the Czech National Bank (ČNB) that assumed a supervision over the financial market in 2006, the Ministry of Finance of the Czech Republic (MoF CR) and the Czech Statistical Office (CSO) served as sources of information and statistical data.

### **1. Banking institutions in the Czech Republic**

To maintain the currency stability after 2000, the banking sector in the Czech Republic was privatised in a tender by foreign entities. Therefore, it is highly internationalised with great concentration and domination by large banking institutions. The banks are leaders in almost every financial group active in the Czech Republic.

As shown in Chart No. 1, from 2008 to 2015, the number of banks and branches of foreign banks had been on steady increase in the Czech Republic, from 37 to 46. However, the structure of the banking sector did not change significantly. As of the end of 2015, it is formed by four large banks (Česká spořitelna, ČSOB, Komerční banka and UniCreditBank) with approx. 60% asset share in the entire banking sector, eight mid-sized and six small banks, followed by five savings banks and 23 branches of foreign banks.

**Chart 1: Development of selected indicators of the banking sector in the Czech Republic from 2008 to 2015**

Indicator	Unit of measurement	2008	2009	2010	2011	2012	2013	2014	2015	Geom. mean
<b>Number of banks</b>	number	37	39	41	44	43	44	45	46	
<b>Selected Indicators from the Profit and Loss Statements of Banks</b>										
<b>1. Profit from financial and operating activities</b>	in billion CZK	138,0	168,4	157,4	162,1	167,2	168,1	167,9	174,4	x
1.1 Yield of interest	in billion CZK	191,9	174,4	167,0	172,3	170,4	154,8	158,9	150,9	x
1.1 Cost of interest	in billion CZK	93,9	71,2	61,7	62,4	62,5	49,3	48,4	39,9	x
Net yield of interest	in billion CZK	98,0	103,3	105,3	109,9	107,9	105,5	110,4	110,9	x
1.3 Yield from dividend	in billion CZK	3,7	9,6	5,9	7,6	6,6	8,8	6,7	7,7	x
1.4 Revenues from fees and commissions	in billion CZK	46,8	46,8	48,4	50,0	49,2	49,9	49	47,6	x
1.5 Costs of fees and commissions	in billion CZK	10,7	10,3	9,9	10,9	11,9	12,8	12,9	13,3	x
Net revenues from fees and commissions	in billion CZK	36,1	36,4	38,5	39,1	37,3	37,1	36,1	34,3	x
<b>2. Management costs</b>	in billion CZK	61,7	60,5	62,4	66,0	66,6	65,8	70,2	70,9	x
2.1 Costs on employees	in billion CZK	31,2	31,1	31,6	33,8	34,4	34,3	34,7	35,2	x
<b>Profit (loss) before tax</b>	in billion CZK	54,0	70,8	65,6	63,4	76,7	73,3	76,1	80,7	x
<b>9. Costs on income tax of legal entities (LEIT of banks)</b>	in billion CZK	8,3	11,0	10,0	10,1	12,3	12,3	13,1	14,1	x
<b>10. Profit (loss) after tax</b>	in billion CZK	45,7	59,7	55,7	53,3	64,3	61,0	63,1	66,6	x
<b>Dividend and shares in profit paid by banks</b>										
<b>Paid dividend and shares in profit including income tax</b>	in billion CZK	35,8	20,2	38,0	38,0	28,7	41,8	36,2	.	x
of these paid to: non-residents	in billion CZK	33,4	13,8	33,5	32,9	24,1	35,6	31,6	.	x
natural persons (non-residents)	in billion CZK	0,2	0,2	0,2	0,2	0,2	0,3	0,2	.	x
<b>LEIT (withholding) from dividend and shares in profit</b>	in billion CZK	2,2	6,2	4,3	4,8	4,4	5,9	4,4	.	x
<b>Additional indicators - Czech Republic</b>										
<b>LEIT rate</b>	%	21	20	19	19	19	19	19	19	x
<b>National revenues from LEIT</b>	in billion CZK	173,6	110,5	114,7	109,3	120,5	113,1	123,2	138,1	x
<b>VAT basic rate</b>	%	19,0	19,0	20,0	20,0	20,0	21,0	21,0	21,0	x
<b>Gross Domestic Product (GDP)</b>	in billion CZK (current prices)	4 015,3	3 921,8	3 953,7	4 033,8	4 059,9	4 098,1	4 313,8	4 554,6	x
<b>Calculation indicators</b>										
<b>Year-on-year index</b>										
LEIT of banks	pure	0,700	1,323	0,904	1,012	1,223	0,996	1,065	1,076	1,021
LEIT - national revenues	pure	1,110	0,637	1,038	0,953	1,102	0,939	1,089	1,121	0,985
Profit of banks from financial and operating activities	pure	1,000	1,220	0,934	1,030	1,031	1,006	0,999	1,039	1,030
Profit of banks before tax	pure	0,900	1,310	0,927	0,966	1,208	0,956	1,038	1,060	1,038
Profit of banks after tax	pure	1,000	1,307	0,932	0,958	1,206	0,949	1,034	1,055	1,048
Paid dividend and shares in profit including income tax	pure	.	0,564	1,880	1,000	0,756	1,456	0,867	.	1,002
LEIT (withholding) from dividend and shares in profit	pure	.	2,757	0,701	1,121	0,910	1,349	0,739	.	1,119
GDP	pure	1,027	0,952	1,023	1,020	0,902	0,952	1,027	1,045	0,992
<b>Share</b>										
Paid dividend including shares in profit and profit after tax	%	73,18	23,13	60,17	61,67	37,46	58,33	50,10	.	x
LEIT of banks and profit of banks before tax	%	15,44	15,60	15,21	15,91	16,11	16,78	17,21	17,47	16,3
LEIT of banks and national revenues from LEIT	%	4,81	9,99	8,70	9,24	10,25	10,88	10,63	10,21	9,1
LEIT (withholding) from dividend and shares in profit and national revenues from LEIT	%	1,29	5,57	3,76	4,43	3,65	5,25	3,56	.	3,7
<b>Correlation coefficient</b>										
GDP and profit of banks from financial and operating activities	pure					0,4850				
GDP and profit of banks before tax	pure					0,6349				
GDP and profit of banks after tax	pure					0,5930				
GDP and LEIT of banks	pure					0,7699				
GDP and national revenues from LEIT	pure					0,2098				
LEIT of banks and national revenues from LEIT	pure					-0,3176				
LEIT (withholding) from dividend and shares in profit and national revenues from LEIT	pure					-0,8705				

Source: own calculations based on materials of MoF, ČNB, CSO (see literature).

The development in the banking sector is closely related to the overall economic development in the Czech Republic, even though the correlation between the gross domestic product (GDP) and the profit of banks shows only a medium relationships in the monitored period. The financial crisis from 2008 was reflected in the drop of GDP in 2009 by 4.8% and also moderately in 2012 and 2013. A positive upturn occurred no sooner than in the last quarter of 2013. In the following period, GDP posted the highest growth rate in 2015, with a year-on-year increase by 4.5%. The economic downturn in the years above objectively created a more

demanding environment for the banking sector despite the fact the sector posted profit, both from financial and operating activities, profit before and after tax, for the whole time. The year-on-year fall in the profits of banks after the drop of GDP in 2009 surfaced only a year later in 2010 and with regard to profit before and after tax it continued in 2011 and 2013, while the profit from both financial and operating activities posted a year-on-year drop no sooner than in 2014. The positive aspect is that the banks active in the Czech Republic did not have to be "bailed out" from public funds, as it was the case e.g. in Germany or other EU countries.

Also "subsidising" pension products, construction savings and mortgage loans from the state budget for the benefit of clients of banks increasing their liquidity and allowing them to provide additional loans significantly helped banks to post continuous profits. It is clear from Chart No. 2 that in spite of a significant drop in 2012, these expenses are high in the Czech Republic and increase the country's indebtedness. In comparison with other countries, the support in the Czech Republic ranks among the highest (Vostatek, 2011).

**Chart 2: The Czech Republic's state budget expenditure to the benefit of accounts of financial institutions from 2008 to 2015 in billion CZK**

Indicator	2008	2009	2010	2011	2012	2013	2014	2015
Contribution for the support of building savings	14,22	13,26	11,74	10,73	5,29	4,95	4,76	4,56
State support for mortgage loans	0,02	0,04	0,02	0,02	0,02	0,02	0,09	0,04
State contribution for supplementary pension insurance	4,99	5,30	5,47	5,59	5,75	6,69	6,89	6,82
<b>Total</b>	<b>19,24</b>	<b>18,60</b>	<b>17,24</b>	<b>16,34</b>	<b>11,06</b>	<b>11,66</b>	<b>11,74</b>	<b>11,42</b>

Source: own processing based on materials of MoF (see literature).

Transactions of financial institutions also significantly impact tax deductions allowing the citizens to reduce the tax base pursuant to Section 15 of Act No. 586/1992 Coll., on Income Tax. This concerns both interest from mortgage loans and loans under building savings plans, and supplementary pension schemes and additional pension savings, and life insurance. However, the problem is that the state does not regularly publish these data and as a result their quantification is not given in this paper.

## 2. Taxation of banks

The banks in the Czech Republic are taxed similarly to other business entities. In the following texts, we will draw our attention to the most important taxes with regard to both tax revenues for public budgets and tax liabilities of banking entities. We will specifically deal with an income tax and value added tax that were introduced in the tax system of the Czech Republic in 1993. Moreover, the Act on Income Tax is supplemented by Act No. 593/1992 Coll., on Provisions for the Determination of the Income Tax Base. This act allows the bank to make adjusting entries to unbarred receivables from loans and provisions for the provided bank guarantees for loans provided by banks to be tax-deductible expenses if statutory conditions are met.

### 2.1 Income tax

The banks in the Czech Republic are taxed at the same income tax rate of legal entities (LEIT) as other business corporations. In the monitored period, the rate was reduced from 21% in 2010 to 19%. The starting point to the determination of the tax base is the economic result posted in the books. As mentioned above, overall the economic result before tax has always been positive for the banking sector, which means that the banks has always posted profit. The profit grew

from 2008 to 2015 on average by 3.8%, while LEIT payments increased more slowly, by 2.1%. This comparison alone shows an inadequate taxation of banks in the Czech Republic which is evidenced by the analysis below. The year-on-year drop of both indicators in the monitored period usually followed the development of GDP; LEIT payments were reflected only a year later. This is due to the deadline for filing tax returns and settlement of tax liabilities following the end of the tax period. On average, the share of LEIT from the profit before tax was 16.3% and in relation to national LEIT income it amounted to 9.1% on average.

In classification of taxpayers registered to LEIT with tax revenue offices by the amount of paid tax liabilities, major banks (from 3 to 10 banks of their total number) rank in this "competition" organised by the Financial Administration of the Czech Republic in TOP 100. This is because the financial sector is among the profitable sectors with high stability, also due to the supervision by CNB.

A significant part of the profit after tax, exceeding CZK 30 billion every year, except for 2009 and 2012, was paid in a form of dividends and share in profits, mostly to non-residents. The highest share of the paid dividend and shares in profit was achieved in 2008 - 73.2% profit after tax; it is less in recent years - 50% of the profit after tax. It means that the banks invest in new technologies and modernisation. The withholding tax from dividend is applied minimally, as the most part is paid to parent companies, as owners of their subsidiaries in the Czech Republic. Pursuant to Council Directive 2011/96/EU on the common system of taxation applicable in case of parent companies and subsidiaries of different Member States, these parent companies established in EU do not pay any income tax if the profit is distributed in the form of dividend, if they own more than 10% share in the registered capital of another company of the Member State. This is evidenced by the negative correlation coefficient between the withholding LEIT revenues from dividend and national LEIT yield (-0.87). It means that these two indicators develop contrary to each other, i.e. they do not correlate.

The close relation between GDP and LEIT of banks in the monitored period is much stronger (0.77) than the one between GDP and national LEIT yield (0.21). As opposed to this, LEIT of banks and national LEIT yield do not correlate at all, which can be evidenced by the negative coefficient -0.32.

The costs of management including employee costs have posted a continuous increase. Since 2008, employee wages have been taxed by 15% income tax from dependant activities, the so-called super-gross wages with potential increase by 7% above four-times the average wage. This is significantly less than in times of the previous progressive taxation. At the same time, the average wages in the financial sector in the Czech Republic rank among the highest.

## **2.2 Value added tax**

The taxation of VAT in the Czech Republic is harmonised with Council Directive 2006/112/EC on common system of value added tax. Pursuant to Section 51 (1) letter d) of Act No. 235/2004 Coll., on value added tax, financial services provided among other by banks are taxed at the basic rate, however some services designated in the VAT Act as financial services are exempt from tax in the Czech Republic, if provided locally. At the same time, the payer may not apply the input tax deduction in relation to these exempt outputs. The residual tax increase the costs that are subsequently reflected in the price of the provided service and remains hidden in the cost of performance in subsequent transaction between VAT payers. Overall, this reduces the tax neutrality. The supposedly difficult determination of the added value, i.e. the tax base and

calculation of VAT as such, is one of the reasons for the introduction of the exemption for financial activities.

Article 137 of the VAT Directive stipulates that the EU Member States may lay down by law that the payers providing the listed financial services may opt for their taxation or exemption. As yet, only six EU Member States – Belgium, France, Lithuania, Germany, Austria and Estonia – allowed VAT payers to exercise this option, and each of them in a different form, e.g. by the scope of performance, client status, i.e. whether or not he is a payer (Pátek, 2008).

After 2008, this problem has been discussed at the EU level (European Commission, 2008). Therefore, the aim of the proposed change would be to increase legal certainty in this area and update current rules with regard to the globalisation of the financial environment (Balážová, Diviš, 2008). The proposal obliged the EU Member States to allow financial institutions to opt whether they would tax the listed services by VAT or apply the tax exemption regime without a deduction entitlement (the so-called opt to tax). In addition, the proposal addressed the so-called cross-border cost-sharing agreement, which is applicable to the tax sharing agreement between the individual EU Member States in the event of cross-border provision of financial services. In September 2008, the proposal was discussed by the European Parliament, however the expected effective date as of 1 January 2009 or 1 January 2012 were not met due to a diverse attitude of the EU Member States. Any further discussions regarding some financial services were stopped. The main reason for failing to approve the proposal was the financial crisis that had just emerged.

In the following years, the attention was drawn to perfect continuously definitions of financial services, which was decisive for the application of the right VAT regime (Legierská, 2013). In practice, such difficult notion of "border lines" between similar financial services that are taxed in one scenario and exempt from tax in another scenario results in frequent mistakes and subsequent court disputes.

The approach to the taxation of VAT financial services is addressed differently across the globe. However, in most countries, the selected financial services are exempt from tax without a deduction entitlement. The scope of financial services that are VAT taxed is different in each country. There are also different approaches to financial services in business-to-business and business-to-consumer transactions.

For example the so-called margin transactions are exempt in Singapore, Australia, New Zealand, South Africa and India. The non-applied deductions due to an exemption without the deduction entitlement are reduced in the form of exemptions in Singapore, Australia, New Zealand, India and Canada or by introduction of compensatory taxes in Israel and Quebec (Šindelář, 2010). It follows from the comparison of these countries that financial services are subject to widest scope of taxation in South Africa. These are all services that are subject to a charge.

### **2.3 Compensatory taxes – interconnection of VAT and income tax**

The purpose of the introduction of compensatory taxes is the additional taxation of entities providing financial services exempt from VAT without a deduction entitlement. The tax base may be designed differently. For instance, as part of regulatory reforms in the financial sector, the International Monetary Fund recommended the introduction of Financial Activity Tax (FAT) in 2010. The IMF report mentions three versions of FAT, in the form of taxation of the volume of wages and profit of financial institutions, then in the form of taxation of an "income" having

a form of excessive wages and profits and in the form of taxation of revenues from high risk involving financial activities exceeding the specified limit.

The first form of FAT, known as the Income Type VAT is the widest one and is used in many countries due to full or significant exemption of financial services from VAT. It follows from the calculation methodology alone that it is an interconnection of VAT and income tax. For example, in Denmark, the rate of this tax applicable to financial institutions stood originally at 10.5%, in 2015, it grew to 12.2% and in 2021 it should rise to 15.3%. At the same time, the total tax revenue ranges from 0.25% to 0.3% of GDP. In Israel, financial institutions pay FAT from the sum of the paid wages and legal entities income tax assessment base, and the rate is set at 16%, i.e. at the same rate as the VAT basic rate. Almost every EU Member State introduced also other taxes from financial services, and not all of them serve as compensation for the exemption of financial activities from VAT.

The introduction of Financial Transaction Tax (FTT) is an alternative to the taxation of the financial sector. It was introduced by the European Commission in 2010, and it was adopted following discussions on 28 September 2011 in the form of the Draft Council Directive on common system of financial transaction tax with effect from 1 January 2014. The transactions with financial instruments between financial institutions, if at least one party to the transaction is based in EU are subject to this tax. 11 EU Members States (Germany, France, Spain, Belgium, Estonia, Italy, Portugal, Austria, Greece, Slovakia and Slovenia) opted for the introduction of the tax. The new tax was introduced with effect from 1 January 2014.

In the Czech Republic, non of the tax that would additionally tax financial institutions have not yet been introduced.

### **3. Discussion**

The Czech banking system predominantly with foreign owners is stable, profitable and has high liquidity. It was affected by the last financial crisis only marginally. Therefore, it did not have to "bail out" from public funds.

It was established on the basis of the performed analysis for 2008–2015 that the banking sector in the Czech Republic is not sufficiently taxed. For example, the profit before tax have grown by 1.7 percentage point faster than LEIT payments in public budgets. An accommodating government policy contributed to this development by reducing LEIT rate by two percentage points to 19% since 2010 to all legal entities, but also by "subsidising" selected financial products to clients of banks. The profits after tax were paid mostly in the form of dividend to parent companies abroad, and were exempt from income tax according to the relevant EU directive as a result. These sums amounted to over CZK 30 billion in the most years during the monitored period. The opposite development in the area of income tax payments of banks or withholding tax from income from the dividend paid by them in relation to the ever growing national LEIT yield is quite alarming.

From the perspective of the Czech VAT Act, the banks may not opt under the VAT Directive to tax the selected financial services or exempt them from tax. They are obliged to exempt these services from VAT without an option to apply a tax deduction. The non-applied VAT deduction is reflected in the costs of banks and subsequently in the bank fees rates. At the same time, it is a generally recognised fact, that these fees of major banks are higher than abroad.

Based on the above, we may recommend to increase the share of the banks in the national tax yield in a manner that the increase in the tax revenues from banks would at least cover the

annual "subsidies" from the state budget for some financial products in the scope of approx. CZK 11 billion, as it is clear from Chart No. 2. This will improve the correlation between the LEIT payments of banks and national LEIT yield which would better correspond with the high added value attained by banks.

### Conclusion

Changes in tax-related laws are very sensitive in every country as they are significantly influenced by the public choice. Therefore, an utterly minimal increase of tax yield from banks in the Czech Republic is being proposed, at least to cover for the annual amount of contributions paid from the state budget for some financial products provided to citizens. This increase of tax revenues from banks, or financial sector respectively, can be achieved by introducing the following:

- a) LEIT rate higher than 19%,
- b) compensatory tax, i.e. FAT or FTT,

or their combination which represents many alternatives. For these reasons, we do not provide a specific rate for any of the taxes. If FAT were introduced, we would recommend that the sum of profit and wages as advised by IMF would become a tax base.

With regard to financial activities and VAT, a change in the VAT Act in line with the VAT Directive can be recommended, i.e. to allow the providers of the listed services in the Czech Republic to opt for their taxation with full entitlement to tax deductions or exemption without an entitlement to tax deduction. The client status, i.e. whether or not he is a payer, may be the decision-making criterion. At the same time, it would be appropriate to reopen the discussion regarding these services at the EU level and propose the extension of the list of financial activities that would VAT taxed as opposed to the current situation. A general recommendation may be that financial services provided for a charge would always be taxed.

The proposals above are also given in response to the Analysis of the profit drain prepared by the Office of the Government of the Czech Republic in 2016. It notes the following: "*The rate of profit drain from the Czech economy is at least two times higher than it would be appropriate under empirical and theoretical assumption derived from the situation on the EU internal market. The largest revenue drain is experienced in sectors with network character.*" The financial sector is the most blatant example.

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# THE PATH TO A SCIENTIFIC CONFERENCE: EXPERIENCE FROM VSFS

VLADISLAV PAVLÁT

## Abstract

The objective of the paper is to present the characteristics of the conception development of the international conferences held so far at the University of Finance and Administration (VSFS) dealing with the problems of financial markets and their regulations and formulate some ideas for their conception in the future. The journey from the informative-educational conference to the professional international scientific conference was far from being easy; the only promising way of organizing further conferences is by means of both narrowing the thematic focus and increasing quality demands. This paradigm has to be backed by the highest level of conference services rendered in compliance with the contemporary professional requirements, and thus facilitating the inclusion of conference proceedings in Web of Science. Important recommendations have been included in the paper.

## Key words

Types of conferences, scientific conferences, types of research papers, impact on education and research, conferences' quality

## JEL

J15, G19, I123, F39

## Introduction

The main goal of the paper is the analysis of 8 conferences on *financial markets and their regulation* organised by the VSFS since 2003, and the evaluation of their impact on education and research in the field of financial markets.

A secondary goal is to present a survey of foreign universities' experience in academic conferences' organisation, typology of conferences, and methods of evaluation. This survey is a basis for an analysis seeking the answer to the question of the level of compliance of our conferences with modern international quality standards and practices.

In order to fulfil the main goal, basic documents on 8 previous conferences held at the VSFS were carefully examined, i.e. mainly the Conference Proceedings.

To fulfil the secondary goal, a number of documents and academic papers from abroad were selected, explained, and commented (see the List of References). A new conferences' classification based on 10 criteria has been devised and applied to our conferences' evaluation. As a result of the analysis, recommendations for future conferences held at the VSFS are summarised in par. 3 and Conclusions.

Comparative analysis as the main research tool was used to verify the following hypothesis: "Conferences dealing with financial markets and their regulation held at the VSFS (classified as informative-educational conferences) have been developing to become fully recognized

professional international scientific conferences representing a qualitatively higher academic conferences' model.”

*Description of methodology applied:* Two tables based on Conference Proceeding containing absolute numbers were about: 1. Conference Participants, structured in 4 groups (a/ VSFS, b/ other Czech Universities, c/ professionals, d/ foreign); and 2. Authors of Conference Papers, compiled in identical structure. Then the data in % were calculated. An “ad hoc” classification scheme (based on foreign literature) was prepared, and characteristics of 8 conferences according to 10 criteria were formulated. Based on comparative analysis, qualitative results about the character of compared conferences and their impact on education and research were formulated. In Conclusion, recommendations for future conferences were summarized.

### 1. Conferences on financial markets and their regulation

In 2003, the first conference on financial markets and their regulation was organised by The University of Finance and Administration in Prague. Since then, eight conferences were held and each time their main focus was modified in harmony with the pressing issues of that time – see Table 1.

**Table 1: List of “Financial Markets' Conferences”**

Year	Conference type/name/dates/venue
2003	1st Conference <b>Regulation and Supervision of Financial Markets</b> Prague, 24th – 25th June, 2003 Prague, The Congress Centre of the Czech National Bank
2005	2nd International Conference <b>Current Financial Markets' Development, Their Regulation and Supervision</b> Prague, 14th – 15th June, 2005 Prague, The Congress Centre of the Czech National Bank
2007	3rd International Conference <b>Current Financial Markets' Development, Their Regulation and Supervision</b> Prague, 13th – 14th June, 2007 Prague, The Congress Centre of the VSFS
2009	4th International Conference <b>Financial Markets and Their Regulation – Development and Current Situation</b> Prague, 16th – 17th June, 2009 Prague, The Congress Centre of the VSFS
2011	5th International Conference <b>Financial Markets, Their Regulation and Supervision in the Course of the World Financial and Economic Crisis</b> Prague, 1st – 2nd June, 2011 Prague, The Congress Centre of the VSFS

<b>2013</b>	6th International Conference <b>Financial Markets in 2013 – Topical Problems of Their Further Development</b> Prague, 29th – 30th May, 2013 Prague, The Congress Centre of the VSFS
<b>2015</b>	7th International Conference <b>Financial Markets within the Globalization of World Economy</b> Prague, 28th – 29th May, 2015 Prague, The Congress Centre of the VSFS
<b>2017</b>	8th International Conference <b>EU Financial Markets: Current State &amp; Future Perspectives</b> Prague, 25th – 26th May, 2017 Prague, The Congress Centre of the VSFS

Source: Conference Proceedings

The first Conferences had the same title. Later on, the titles were updated and focused on 3-6 topics.

The conferences were based on a central idea, i.e. a close connection of theory and practice. The selection of papers submitted to the conference respected this principle.

## 2. Experience from abroad

In this section, selected literature relevant to academic conferences definitions, types of conferences, forms of conference papers and their writing, conferences rating and classification is commented.

Academic conferences are researchers' meeting where they present and discuss their topics and research results. *"A conference is a gathering of colleagues to "confer" about their own and each other's work."* (Quora, 2017) The opinions of many authors are similar; it is reflected in different dictionaries. A definition presented by Klemeš (Clean Techn. Environ Policy, 2016) explains the goal of academic conferences in a clear way: "Scientific conferences are an important part of the activities of majority of researchers. These are venues for presenting new research, receiving intermediate feedback and very importantly for networking with the other researchers. The conferences have been growing in importance as knowledge dissemination channels."

The need to discuss the results of research works gave birth to different forms of researchers' meetings; during the historical development, new forms of such meetings have been found. They differ by content, goals, participants etc.

In literature, the following forms/types of researchers' meeting are frequently distinguished: (1) Congress; (2) Conference; (3) Symposium; (4) Seminar; (5) Colloquium; (6) Workshop; (7) Round Table. (Port, 2016)

Congresses mostly have a world-wide impact on development of different branches; this is the reason why they - according to some authors - are not included into the above classification.

When different approaches or criteria are applied, more detailed characteristics of the above cited forms of meetings differ. There are attempts to distinguish different types of conferences. In most cases, the different opinions of authors from different countries are caused by the different historical development of research and its organisation.

It is difficult to organise successful conferences: in fact, it is an art. “Organising a successful international conference is a demanding task. There are many issues to be dealt with and neglecting or not paying enough attention to each of them can lower the venue success or even ruin it completely. The scientific organisers are bidding for their successful future or failure. The organisers of the conference logistics can finish with profit or loss for their institution”. (Klemeš, *ibidem*)

There are professional institutions and/or firms which are offering advice and other services to potential participants of academic conferences. (EU. Cordis, 2016;). Many International Journals Publishers offer useful advice, how to write research papers etc. (Elsevier, 2016; Library Sacred Heart, 2016).

There is a vast literature on academic conferences' ratings, conferences' ranking (Conference Ranks, 2017) and methodology of academic conferences' classification according to research branches (RAVENSCROFT, J. et al., 2013).

Academic papers' classification is relevant to our conferences' evaluation. One of such classifications enumerates the following types of academic papers: (1) Analysis papers; (2) Argumentative papers; (3) Persuasive papers; (4) Cause and Effect papers; (5) Comparison and Contrasts papers; (6) Definition papers; (7) Narrative and Descriptive papers; (8) Division and Classification papers. (OWL.Roanestate.edu, 2017; Profy Essays, 2017). Two main research papers (analytical and argumentative) were in detail compared by OWL (OWL, 2017)

As for our next academic conference on financial markets in 2019, it is very important to draw on experience of other Universities papers, especially of European Universities papers.

Our paper presents a new comprehensive classification of academic conferences. This classification is based on the 10 following criteria:

(1) Content; (2) Goal/aim; (3) Significance of results; (4) Significance of results for a given branch; (5) Conception of conference; (6) Access to the conference/target participants; (7) Number of participants/scale of conference; (8) Number of days; (9) Location; (10) Participants expected activity.

The multi-criterial classification is probably more advantageous for conference evaluation than a non-systemic description of “conference types” not based on clear criteria.

**Table 2: Academic Conferences Classification**

	<b>Criteria</b>	<b>Types</b>
1	Content	(a) mono-thematic with a narrow (specific) content (b) mono-thematic with a broad content (with a focus on a list of questions) (c) other: conference with a number of topics
2	Goals/Aim/Objective	(a) representative (an anniversary, other important events) (b) occasional (c) periodical
3	Significance of results	(a) world-wide (b) continental (c) EU (d) regional (e) local <i>Abbreviated alternative classification (according to participants nationality)</i> (f) national (g) with international participation (h) international
4	Significance of results for a given branch	(a) innovative (b) conceptual (c) methodological (d) informative-educational
5	Conference General Conception	(a) educative (nominated speakers; no other papers; presented, no discussion, only questions expected) (b) informative-educational (nominated speakers and speakers presenting papers; questions and discussion expected) (c) professional (academics' papers, experts' papers; questions and discussion expected); (d) scientific (academic researchers' papers, other expert papers; questions and a broad discussion expected)
6	Access to the conference/target participants	(a) open conference (anybody may participate); (b) open conference (accessible to participants fulfilling defined conditions (fees, with a paper or not); (c) closed (selected invited participants)
7	Number of Participants/ Conference scale	(a) big (more than 100 participants) (b) middle-size (up to 99 participants) (c) small (up to 30-40 participants)
8	Number of days	(a) one-day, (b) two-days, (c) more than two days
9	Location	(a) at the organizing University site, (b) outside the University's site
10	Participants' expected activity	(a) submitting a paper; presentation of the paper (.ppt), active participations on plenary discussions and in sections; (b) presentation of a paper (.ppt), active participation in sections (c) presentation of a paper

A series of other partial questions were not analysed, such as for example the usefulness of individual criteria, ranking of criteria, issues related to conferences' financing etc.

### 3. Discussion

**1 Content.** All 8 conferences were evaluated as conferences type 1b. **2 Goals/aims.** All 8 conferences were evaluated as conferences type 2c. **3 Significance of results.** All 8 conferences were evaluated as conferences type 2e/2g. **4 Significance of results for branch.** Six of the 8 conferences were evaluated as conferences type 4d; Two Conferences (2015 and 2017) - type 4 and type 5c. **5 Conference General Conception.** The 1st, 2nd and 3rd conferences - type 5b; Fourth and Fifth conference oscillated between the type 5b and type 5c. The 6th conference was a conference type 5c. The 7th and 8th Conferences are transitory conferences from type 5c to the type 5d. **6 Access to the conference/target participants.** All 8 conferences were evaluated as conferences type 6b. **7 Number of participants/conference scale.** Conferences 2003-2011 – type 7a, 2013 – type 7b, 2015 and 2017 – type 7c. **8 Number of days.** All 8 conferences were two – day conferences, i.e. type 8b. **9 Location.** Seven conferences - type 9a, only one was type 9b. **10 Participants' expected activity.** There is an oscillation between 10b and 10c.

The above results are demonstrated by the following two tables illustrating the changing character of conferences.

**Table 3: The numbers and structure of participants (%)**

Participants	03	05	07	09	11	13	15	17
VŠFS	32,0	22,0	32,7	48,1	64,4	65,3	83,3	26,6
Other Unis	5,8	8,8	7,5	7,5	5,6	11,3	7,1	8,8
Professional	59,8	65,4	58,1	42,4	23,4	1,6	2,3	44,4
Foreign	3,0	2,9	3,7	1,5	0,9	17,7	7,1	20,0

Source: Conference Proceedings

**Table 4: Numbers and the authors' structure (%)**

Authors	2003	2005	2007	2009	2011	2013	2015	2017
VŠFS	11,7	44,1	42,4	31,0	44,1	54,7	44,8	46,6
Other Unis	4,8	14,7	15,1	13,7	8,8	16,6	10,3	13,3
Professionals	70,5	29,4	30,3	48,2	47,0	2,4	3,4	6,6
Foreign	11,7	11,7	12,1	0,6	-	26,1	37,3	33,3

Source: Conference Proceedings

A further object of the analysis was the *conferences' impact on the quality of education*. Changes of relevant courses were examined and teachers interviewed. It has been proved that the following courses were partially modified: (1) The actual theories of Financial Services (N\_STFS), (2) Contemporary Financial Markets (N\_SFT); (3) International Financial Services (N\_IFS-1 and N\_IFS-2).

The list of theses (Bc, Mgr.) were actualized every year.

On the base of the above results, it is evident that there is a unique opportunity to upgrade the quality of our conferences on financial markets. There is a chance to:

(a) connect more closely our conferences with our University research projects; (b) upgrade the content and form of presented papers; (c) intensify the contacts with specialists in the field of financial market research and education in the CR and the neighbouring EU countries; (d) apply the active marketing methods during the conferences preparatory stages; (e) take care of a full

evidence from the conferences and publish complete Proceedings on the conference web-side; (f) give more space to discussion and networking in the conferences time-tables; (g) put more stress on quality of conference papers and presentations in English language.

It is most probable that in the horizon of the next 5 – 10 years, the present forms of academic conferences will be prevailing over more sophisticated forms, such as electronic conferences. However, the conferences' organisation will have to be substantially modernised by means of administrative agenda automation.

To conclude: The main goal and secondary goal of this treaty were fulfilled; the hypothesis defined in the Introduction was partially verified. For a stronger verification, statistical analysis should be extended. Recommendations were included in par. 3 Discussion and in the Conclusion.

### **Conclusion**

1. Since 2003, VSFS Conferences on Financial markets have been attractive for their participants. Today, they belong to traditional biennially organised conferences, results of which are implemented in the process of education both at Bc., Mgr. and Ph.D. levels. The evaluation of conferences has been positive; conferences have been attractive for academic teachers, students, research workers and financial market professionals in the Czech Republic and from abroad.
2. Since 2009, the character and form of VSFS FT Conferences has been changing; in 2009, the process of international standards implementation started. The character of the last two conferences (2015, 2017) has been approaching to standards requirements.
3. In 2015, the Conference Proceedings were – for the first time, in addition to the electronic version on CDs - printed out, and a request to Thomson Reuters was submitted.
4. The current FT Conference (2017) requirements on presented papers quality are more rigorous than in 2015, when a double blind review process was applied for the first time. All the reviewers are Professors and/or Associated Professors from VSFS and other Universities in the Czech Republic, Slovakia and Poland.
5. Since 2009, there has been a distinct general tendency of transition from quantity to quality, applying stricter requirements on the quality of papers and papers' presentation as well.

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# **SOME DEVIATIONS FROM RATIONALITY WHEN INVESTING IN FINANCIAL MARKETS**

CTIBOR PILCH

## **Abstract**

According to traditional financial theories, all financial market participants think and act rationally. Their preferences will immediately adapt to new information and will be based on maximization of benefit theory. This theory is logical, but fails when applied to real life. That is why, in response to the malfunction of the theory of efficient markets and rational behavior models, in practice, a new approach to explaining the behavior of financial market participants has been created, namely behavioral finance. Theories of Behavioral Finance say that some financial issues and phenomena can be better described and understood when we use models where subjects do not have to act rationally. According to this theory, there are many deviations from rationality. Some are described better, others less. Some are emotional-dependent, they are called emotional. Others, emotional-independent, are called cognitive. Two of them, one of each group, are analyzed in the present submission. These are Tolerance to Risk and Anchor Deviations. The results of a sample survey of 1,350 respondents by the contributor document the fact that the deviations exist despite age and education.

## **Keywords**

Risk, risk tolerance, anchoring, cognitive deviations, emotional deviations

## **JEL classification**

G21, G23

## **Introduction**

Some deviations from rationality are so-called “Adaptable”, because they allow people to adapt to certain situations and take more efficient and quicker solutions. These solutions are not based on detailed rational analysis, but on the use of cost-effective and intuitive designs.

Other deviations from rationality arise as a result of the fact that people do not have the correct mental mechanisms developed to solve some of the problems, or use mechanisms that are not very suitable for dealing with these specific problems.

For practical use, deviations from rationality can be defined as systematic errors of investors in collecting, analyzing and evaluating information, and then in making economic decisions. It is indeed a systematic error, because a random error does not have to mean a deviation from rationality. The current science of behavioral finance recognizes many deviations from rationality and their number is probably not definitive. Some deviations overlap substantially or may be the result of others. Derogations from rationality can occur at any stage of the decision-making process. Starting from the form in which the new information is presented, until the decision is taken. For the purposes of this submission, it seems better to break the deviations by nature. According to this criterion, we break the deviations from rational behavior into cognitive, emotional and mixed. (Some sources refer to the cognitive and emotional breakdown, but we do not see it as sufficiently precise.)

### A.) Cognitive deviations

Cognitive deviations from rational behavior are usually based on incorrect collection, analysis, and interpretation of information. They can be corrected by learning, possibly by appropriate financial advice. It should be noted that science cannot satisfactorily explain the origin of these deviations from rationality.

### B.) Emergency deviations

Emotional deviations from rationality in thinking and acting are conditioned by emotional factors, especially by desire and concern. Not every emotion must be an expression of irrationality. Emotions, however, support the adoption of fast and economical decisions that are beneficial especially when the problems are very complex and their rational solution would take more time than is acceptable. In certain situations, however, emotions can suppress rational thinking and result in harmful or irrational action. Changing emotional inclinations is much more difficult than cognitive deviations. Emotional deviations are generally divided in the literature according to their origin in mental mechanisms to:

- 1) Derogations that support a willingness to believe something, which affects positive feelings, even in cases where there is evidence of a false perception of specific phenomena.
- 2) The deviations that make people strong when refusing to accept phenomena and events that are unpleasant to people. These are mainly aversive emotions.

### C.) Mixed deviations

Individual deviations are often intertwined. We do not always know clearly whether a deviation is cognitive or emotional. Typically, they include both. They are usually a combination of these, and it is unclear whether emotions predominate, or misinterpreted information. Until now, the distribution of deviations has been based mainly on their external manifestations and usually reflects some of the decision-making process in which they occur, or follow the nature of the deviations. In this paper, I will focus in detail on one deviation from the emotional category, namely "Risk tolerance" and one deviation from the cognitive category, a deviation called "Anchoring".

#### **1. Tolerance to risk**

From the point of view of declared and true behavior on financial markets, we can distinguish subjective and objective risk tolerance. Subjective risk tolerance is given by the individual's attitude towards the risks, attitudes, and preferred pattern of behavior in the area. Subjective risk tolerance is measured in financial practice by self-assessment of the client, most often based on the completion of a specific questionnaire, possibly through an interview with the client and his financial advisor. The great advantage of detecting subjective risk tolerance is that it allows people to express risk preferences to those who, because of external factors, have to choose less risk decisions. The disadvantage of detecting subjective risk tolerance is the sensitivity to the formulation of questions. Objective risk tolerance is given by real patterns of individual behavior. In the financial field, for example, the share of risky financial products exists in the overall structure of the portfolio. In financial practice, however, it is not easy to ascertain the exact volume and structure of an individual's property. To determine the tolerance, resp. individual aversion to financial risks, it is appropriate to combine both types of surveys, subjective and objective. Several studies have shown that there is a relatively strong correlation between subjective and objective tolerance. After eliminating external factors, especially socio-cultural and socio-economic, subjective and objective tolerance should overlap. Different levels of risk tolerance between individual social, economic and demographic groups are most likely due to evolutionary adaptation. In older times, for example, higher hopes for survival were vital, persistent and agile individuals who were able to cope with the physical hazards presented to

them by the surrounding environment. At present, individuals who know how to deal with risks in business, financial markets, sports, and so on are most supported. However, cultural factors also affect the level of risk tolerance. A large part of the personality identity is created under the influence of a particular social group, such as a nation, ethnicity, religion, employment, etc. Individuals take the norms of these social groups and identify them to a greater or lesser extent. Some religions, for example, forbid their gambling members, while others reserve some risky activities, Sport, or business for men only and so on. Genetic, biological, social and economic factors are combined with each individual. Given the current state of knowledge, it is not possible to precisely determine the proportion of each factor on the risk tolerance level. However, risk tolerance research shows that individual differences in tolerance are significantly higher than differences between groups. For example, many researchers have shown that women have less risk tolerance than men. However, this does not mean that every woman is necessarily less tolerant of risk than a man. The range of risk tolerance within each gender is much higher than the margin of tolerance among genera. Risk tolerance is manifested in very different situations, from sport, through the style of driving, lifestyle, type of work to investment in financial markets. In the literature, risk tolerance has long been debated whether there is any fundamental tendency towards higher or lower risk tolerance in general or whether a particular individual tolerates different types of risk in another way. There are, for example, people who engage in extreme sports, but in their financial portfolio they have predominantly conservative financial products. On the other hand, there are cases where investors have risky financial products but prefer a conservative style to their personal lives. However, the mismatch between tolerance of financial risks and other types of risks can also be caused by factors such as limited knowledge of financial products, limited access to financial markets (for example, due to low incomes), a small supply of risky financial products at a particular time, place, (For example, before 2000 there were no equity funds in Slovakia, and almost all investors could only choose from conservative financial products even though some would prefer products with a higher degree of risk and yield). External circumstances, including cultural and social impacts, can significantly alter the natural tendency towards higher or lower risk tolerance.

#### Factors influencing tolerance to risk:

- **Male:** Generally, men have a higher risk tolerance than women. This view is confirmed by individual studies and analysis of several studies on gender differences in risk tolerance (Byrnes, Miller and Schaffer, 1999). This study, among other things, states that men showed higher, sometimes significantly higher, risk tolerance in 14 out of 16 types of risk behaviors.
- **Age:** Several studies agree that the risk tolerance increases with increasing age. For example, research by Claudius Sahn (2007) indicates that HRS respondents (mostly people aged 50 and over) each year will experience a general tolerance for risk 1.7%, i.e. about a fifth in 10 years. The most striking is the aversion to risk after the 65th year of life. The influence of age may, however, be altered by education. Highest levels of education are reached after reaching the age of 25, respectively, but in many cases even later. Because education is positively correlated with risk tolerance, two differently equal persons at the same age may have a different risk tolerance in view of the different levels of education attained.
- **Education:** Virtually all research on tolerance of financial risks is in the opinion that educated people are more tolerant of risks. The causes and direction of this is not clear. On the one hand, it can be assumed that educated people can better assess the risks and thus better tolerate them (people usually have the most concerns about things they do not know or understand). Education can give people a sense of competence that is proven to increase their willingness to take risks, even if their competence fails to cope with the actual

knowledge of the phenomenon. On the other hand, education itself may be more tolerant of risk. In particular, college education is associated with accepting income loss during the study period. Another factor that blurs the impact of education on the tolerance of financial risks is the income or wealth. The amount of income and wealth is usually correlated with education, because educated people earn more on average. Rich people have more risky products in their portfolios. However, in particular, people with higher education tolerate financial risks better than people with primary and secondary education.

These factors will be discussed in more detail.

The other factors:

- Type of economic activity
- Income and wealth
- Source of wealth
- Life cycle phase

On a survey of 1350 respondents surveyed between 2012 and 2016, I tried to prove the validity of some of the claims in the previous text, and so to prove the existence of some deviations from rationality and their dependence on various factors. The sample consisted of 1 150 students from the University of Economics and 200 students from the Faculty of Civil Engineering of the Slovak Technical University in Bratislava.

The first part of the questionnaire focused on the tendency of respondents to risk.

### 1. What do you think first of all, if you hear the word "risk"?

<b>Results 1</b>	1st year Men EU	<b>1st year Women EU</b>	3rd year Men EU	<b>3rd year Women EU</b>	5th year Men SvF STU	<b>5th year Women SvF STU</b>
Mainly danger	12%	<b>28%</b>	10%	<b>25%</b>	14%	<b>31%</b>
More uncertainty	42%	<b>66%</b>	35%	<b>59%</b>	39%	<b>61%</b>
Rather opportunity	22%	<b>4%</b>	29%	<b>12%</b>	27%	<b>35%</b>
Extreme excitement	24%	<b>2%</b>	26%	<b>4%</b>	20%	<b>3%</b>

### 2. What do you think are your investment experiences?

<b>Results 2</b>	1st year Men EU	<b>1st year Women EU</b>	3rd year Men EU	<b>3rd year Women EU</b>	5th year Men SvF STU	<b>5th year Women SvF STU</b>
I do not have much experience so far.	38%	<b>72%</b>	22%	<b>65%</b>	36%	<b>66%</b>
I have some experience	26%	<b>22%</b>	33 %	<b>25%</b>	31%	<b>27%</b>
I have average experience and I know what revenue I can expect from a certain type of investment	34%	<b>4%</b>	38%	<b>7%</b>	32%	<b>6%</b>
I am experienced and have enough knowledge about investing	2%	<b>2%</b>	7%	<b>3%</b>	1%	<b>1%</b>

**3. What kind of financial products do you have your own experience with? (Please mark more options)?**

<b>Results 3</b>	1st year	<b>1st year</b>	3rd year	<b>3rd year</b>	5th year	<b>5th year</b>
	Men EU	<b>Women EU</b>	Men EU	<b>Women EU</b>	Men SvF STU	<b>Women SvF STU</b>
I have a term deposit at the bank	15%	<b>16%</b>	22%	<b>9%</b>	21%	<b>9%</b>
I have a life insurance policy	44%	<b>48%</b>	40%	<b>51%</b>	39%	<b>49%</b>
I have building savings	26%	<b>20%</b>	27%	<b>29%</b>	27%	<b>21%</b>
I have a savings account, resp. other	15%	<b>16%</b>	11%	<b>11%</b>	13%	<b>21%</b>

**4. You have to choose between a certain but less paid job or a less secure but more profitable job or business. Which option do you choose?**

<b>Results 4</b>	1st year	<b>1st year</b>	3rd year	<b>3rd year</b>	5th year	<b>5th year</b>
	Men EU	<b>Women EU</b>	Men EU	<b>Women EU</b>	Men SvF STU	<b>Women SvF STU</b>
I'm sure, longer employment, less paid	6%	<b>22%</b>	2%	<b>15%</b>	10%	<b>19%</b>
I prefer a little bit less place, but with perspective growth of salary	26%	<b>62%</b>	23%	<b>63%</b>	22%	<b>61%</b>
More likely a less secure place, but with a perspective higher wage growth	40%	<b>12%</b>	41%	<b>14%</b>	35%	<b>13%</b>
The possibility of high earnings is for me more than job security	28%	<b>4%</b>	34%	<b>8%</b>	33%	<b>7%</b>

In my first question, I understand the risk as an opportunity, less of a danger. Women are more cautious and less brave in our sample than the average of our sample. The bold group in the "Main Opportunity" and "Excitement" rows oscillating up to about 50%. The behavior of our sample moderately supports the claim that people with higher education have higher tolerance for risk.

In the second question, which examines investors' investment experience, the survey has come to pass: our students are re-evaluating their experiences and unrealistically evaluating their experiences (about 60% of them are considered as experienced investors, or have the impression that their knowledge is reasonable, one third is willing to admit that it does not yet have much investment experience.

There is another question about personal experience, especially lesser-known (so-called) financial products. Approximately 70% of respondents report that they have a life insurance

policy and building savings, that is, the low-risk products they have made in most of the cases their parents. The fourth question, which looked at the preference for a smaller, but more onerous salary or uncertainty, came as follows: Our students prefer the possibility of higher earnings; only about 2-10% of men and 15-22% of women do not prefer it. This also confirms the high risk tolerance of our respondents. It is related to higher education and lower average age. We observe somewhat lower risk tolerance for Students at the Faculty of Civil Engineering. They are probably aware of a smaller range of economic knowledge than students of the University of Economics. However, the stated risk tolerance is quite large.

In general, young people and people without a commitment tend to risk more behavior. We justify this with a low level of life experience, and with whoever does not have a family, he has almost no responsibility for his surroundings. Considering that the observed sample has an average of 23 years, it can be assumed that it has no obligations.

## 2. Anchoring

Anchor is a deviation by means of which the person in determining whether or not to estimate any value of the magnitude is based on the first information that is available.

This information is often very inaccurate, it is misleading, and sometimes unrelated to the problem. In the event that further information is added which can shift this value in both directions, ie upwards or downwards, the person usually takes the first value as a refrain. The following are examples of this.

Read questions carefully and answer:

### Question # 5.

A) How many people do you think is the second largest city in Russia - Sankt Peterburg / in Slovakian the name of Saint Petersburg /? If you do not know the exact answer, do not mind, try answering other questions:

B) Is there more than 2 million inhabitants? / Do you think the right answer / yes no

Ca) If you answered yes, then answer: is this more or less than 2.5 million? Circle the answer that is closer to you / less

Cb) If you did not answer, then answer: is it more or less than 1.5 million? Circle the answer that is closer to you / less

D) How much do you think it is about? / Write the amount in millions /

<b>Results 5</b>	1st year	<b>1st year</b>	3rd year	<b>3rd year</b>	5th year	<b>5th year</b>
	Men EU	<b>Women EU</b>	Men EU	<b>Women EU</b>	Men SvF STU	<b>Women SvF STU</b>
Actual value	5 mil.	<b>5 mil.</b>	5 mil.	<b>5 mil.</b>	5 mil.	<b>5 mil.</b>
Average estimate	3,91 mil.	<b>3,2 mil.</b>	4,4 mil.	<b>3,7 mil.</b>	3,2 mil	<b>3,4mil</b>
Number of responses in boot interval	43%	<b>45%</b>	44%	<b>47%</b>	43%	<b>49%</b>

Although Sankt Peterburg has 5 million inhabitants, the average estimate was 3.71. But it is more than the data interval we have provided to the respondent. This anchorage was not very noticeable even though the number of people in our introductory interval was 43-49%.



An additional 51% of the people could not be caught. Probably it's because we chose a little interval.

**Question # 6.**

A) What large area in km<sup>2</sup> do you think China has? If you do not know the exact answer, do not mind, try answering other questions:

B) Is it more than 5 million km<sup>2</sup>? / Do you think the right answer / yes / no

Ca) If you answered yes, then answer: is this more or less than 6 million? Circle the answer that is closer to you / less

Cb) If you answered no, then answer: is it more or less than 4 million? Circle the answer that is closer to you / less

D) How much do you think it is about? / Write the area in km<sup>2</sup> /

<b>Results 6</b>	1st year	<b>1st year</b>	3rd year	<b>3rd year</b>	5th year	<b>5th year</b>
	Men EU	<b>Women EU</b>	Men EU	<b>Women EU</b>	Men SvF STU	<b>Women SvF STU</b>
Actual value	9,6 mil. km <sup>2</sup>	<b>9,6 mil. km<sup>2</sup></b>	9,6 mil. km <sup>2</sup>	<b>9,6 mil. km<sup>2</sup></b>	9,6 mil. km <sup>2</sup>	<b>9,6 mil. km<sup>2</sup></b>
Average estimate	5,47 mil. km <sup>2</sup>	<b>5,1 mil. km<sup>2</sup></b>	5,2 mil. km <sup>2</sup>	<b>4,82 mil. km<sup>2</sup></b>	5 mil. km <sup>2</sup>	<b>5,4 mil. km<sup>2</sup></b>
Number of responses in boot interval	61%	<b>62%</b>	67%	<b>65%</b>	66%	68%

In this case, the estimate is very different (almost half) and, on average, 65% of respondents have suffered the anchor caused by the information provided.

**Question # 7.**

A) How many inhabitants does the Slovakian city of Prešov have? If you do not know the exact answer, do not mind, try answering other questions:

B / Is there more than 50,000 inhabitants? / Do you think the right answer / yes

Ca / If you answered yes, then answer: Is it more or less than 55 thousand? Circle the answer that is closer to you / less

Cb / If you did not answer, then answer: is this more or less than 45 thousand?

Circle the answer that is closer to you / less

D) How much do you think it is about? / Write the number of inhabitants in the whole thousands /

<b>Results 7</b>	1st year	<b>1st year</b>	3rd year	<b>3rd year</b>	5th year	<b>5th year</b>
	Men EU	<b>Women EU</b>	Men EU	<b>Women EU</b>	Men SvF STU	<b>Women SvF STU</b>
Actual value	91,8 tis.	<b>91,8 tis.</b>	91,8 tis.	<b>91,8 tis.</b>	91,8 tis.	<b>91,8 tis.</b>
Average estimate	63,2 tis.	<b>56 tis.</b>	66 tis.	<b>52 tis.</b>	51 tis.	<b>52 tis.</b>
Number of responses in boot interval	41%	<b>63%</b>	47%	<b>71%</b>	72%	<b>72%</b>

Given that 99% of our respondents live in Slovakia, we assumed that the third largest city in the Slovak Republic would not even be anchored. But we were wrong. The estimate differed by one third, more women, and 49% for men and 69% for women. Here too the anchor works.

### **Conclusion**

In general, young people and people without a commitment tend to risk more in their behavior. We justify this with a low level of life experience, and with whoever does not have a family, he has almost no responsibility for his surroundings. Considering that the observed sample has an average of 23 years, it can be assumed that it has no obligations.

Men are more prone to risk than women, and are more tolerant of risk. Some authors justify this by the division of labor in ancient times, where men have riskier activities. Women are less interested in investing, less interested in less interest, so they are likely to be less competent in financial matters than men, so they are less willing to take the risk. They take investment decisions at a higher degree of uncertainty than men, and therefore choose more conservative investment strategies than men. Men are considered more experienced and better informed. It is usually excessive self-confidence. Women's decision-making is more responsible.

Even the existence of a deviation has been confirmed.

Although our students also studied geography, it was confirmed that the data we wanted to obtain from them underwent this deviation. A substantial majority of them fled to the first possible misleading information. And the results were the same.

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# IMPACT ON PSD II IMPLEMENTATION FOR THE PAYMENT SERVICE

OTAKAR SCHLOSSBERGER

## Abstract

On 12 January 2016, Directive (EU) 2015/2366 of the European Parliament and of the Council on payment services in the Internal Market entered into force (hereinafter referred to as the "PSD II" Directive). The Directive, inter alia, requires financial institutions keeping the payment accounts of their clients to make their systems and clients' data available for the third party services under certain conditions, if the client asks for it. This fact can lead to the creation of new business models. The aim of this article is using the methods of descriptive analysis to point out the expected possible changes within the providing of payment services according to PSD II and the legal status of entities that would like to provide the payment services after PSD II implementation. The contribution will be based on the hypothesis that "PSD II implementation will improve quality in providing payment services to end users". The author concludes that by PSD II transposing into the legal system of the Czech Republic the number of payment service providers from non-banking companies will increase and this fact will increase the competition in this sector. By this statement the hypothesis was established.

## Keywords

PSD II, payment services, payments, provider, administrator.

## JEL classification

G21, G23, K23

## Introduction

Payment services are regulated in the Czech Republic (hereinafter referred to as "CR") as of 2009, namely by Act No. 284/2009 Coll., on payment transaction (hereinafter referred to as "ZPS") [4]. In the area of payment transactions, however, this was not the first regulation, as it was ensured already in 2003, namely by Act No. 124/2003 Coll., on transfers of funds, electronic payment instruments and payment systems. The law regulated "*the history of payment transactions and clearing for the first time and in full*" [11] incl. legal regulation of payment systems with irrevocability of clearing. This law further introduced the concept of electronic money into the Czech legal order [3]. At that time, CR was preparing for accession to the European Union ("EU") and therefore it had to transpose some legislation at the level of directives into the Czech legal order.

Therefore, before the descriptive analysis of Directive (EU) 2015/2366 of the European Parliament and of the Council of 25 November 2015 on payment services in the internal market, amending Directives 2002/65 / EC, 2009/110 / EC and 2013/36 / EU and Regulation (EU) No 1093/2010 and repeals Directive 2007/64 / EC (PSD II) as regards payment services and their providers, we will recall the current state of payment services (i. e. May 2017) and the entities that can provide it. Further it will be point out the expected changes within the providing of payment services under PSD II and the legal status of these entities that will want to provide

payment services after PSD II implementation in order to confirm the established hypothesis based on the premise that "implementation of PSD II will improve the quality in providing of payment services to the end-users".

### 1. Payment services versus payment transactions

From a general literature dealing with, among other things, payment transactions, it is possible to choose, for example, a characteristic according to Mr. Polouček, who defines it as "*the relationship between the payer and the payee in which the payment occurs, i. e. the transfer of monetary assets between the payer and the payee*". From this general definition it can be inferred that various payment instruments regulated by special legal regulations can be used (eg cash-in-bills in the form of banknotes and coins [1]), documentary payments [15], cheques [13], transfer orders [4], etc.).

Payment services are a category that first appeared in autumn 2009 in connection with the effectiveness of the ZPS. What is considered to be a payment service is defined in a clearly exhaustive list of ZPS [4, § 3]. These are the following activities:

- cash deposit on a payment account,
- cash withdrawal from a payment account,
- transfer of funds at the initiative of the payer (payment), the payee (collection) or on the payer's initiative through the payee (debit card payment transaction), unless it is a loan,
- transfer of funds at the initiative of the payer, the payee or the payer via the payee (credit card payment operation) to which the credit is granted,
- issuing and administration of payment instruments and payment facilities,
- transfer of funds where neither the payer nor the payee uses the payment account, I. e. the so-called money transfer,
- payment transaction by the provider of the electronic communication services, if the payer's consent to executing the payment transaction is given through an electronic communication equipment,
- non-cash foreign currency trading, unless it is an activity that is an investment service under the law governing a capital market business [13].

In order to avoid various interpretations, what is considered a payment service and what is not; the ZPS also sets the so-called negative definition of the payment service. The payment service is therefore not considered as:

- preparation, collection, processing and delivery of banknotes and coins,
- exchange activity,
- issue of cheques, bills of exchange or traveler's cheques in paper form,
- issue of paper vouchers for goods or services,
- issue of postal bills according to a special legal regulation [2],
- payment transactions between payment service providers or their agents on their own account,
- payment transactions executed within the payment system,
- payment transactions carried out under the management of securities,
- cash payment by the supplier of goods or services to the customer within the payment for goods and services and some other activities.

It is therefore clear from the above that **payment transactions** can be considered to be wider than payment services in view of the fact that it includes wider legal relationships between clients - the client and its bank - given by a wider range of payment instruments. This claim can

be based on the legal bases set out in the ZPS. Payment and related services may only be provided by banks or credit unions under special legal regulations [14].

**The payment service** is then a category that contains only selected payment instruments but may also be provided by other entities (see below). Therefore, payment services do not, as mentioned above, include the issue of checks and their clearing, the implementation of documentary payment transactions as a payment-hedging instrument, providing a guarantee or the collection of bills of exchange.

## 2. Payment service providers

Who can provide payment services is specified in § 5 of the ZPS. It is about:

- banks under the terms and conditions laid down by law regulating the banks' activities,
- foreign banks and foreign financial institutions under the conditions stipulated by the law regulating the banks' activities,
- savings and credit cooperatives under the terms and conditions laid down by the law regulating the activities of savings and credit cooperatives,
- electronic money institutions,
- foreign electronic money institutions,
- small e-money issuers,
- payment institutions,
- foreign payment institutions,
- small e-money providers,
- Czech National Bank.

It is clear from the overview that in 2009 ZPS has identified several new entities that can provide payment services. These new subjects are governed by the ZPS, which sets the rules for their creation. The regulation represented by the ZPS itself contains transpositions of the relevant EU directives. The ZPS has introduced the "payment service provider" category, which includes not only banks or savings banks and credit cooperatives as typical providers of payment services but just these new entities. Payment service providers may develop their business on the basis of a business authorization or registration. Under EU law, payment services can also be provided on a cross-border basis, under the authorization or registration with the home supervisory authority and supervision.

Table 1 shows the evolution of the number of payment service providers (excluding banks and credit unions) between 2009 and 2017.

**Table 1: Development of non-banking entities that can provide payment services**

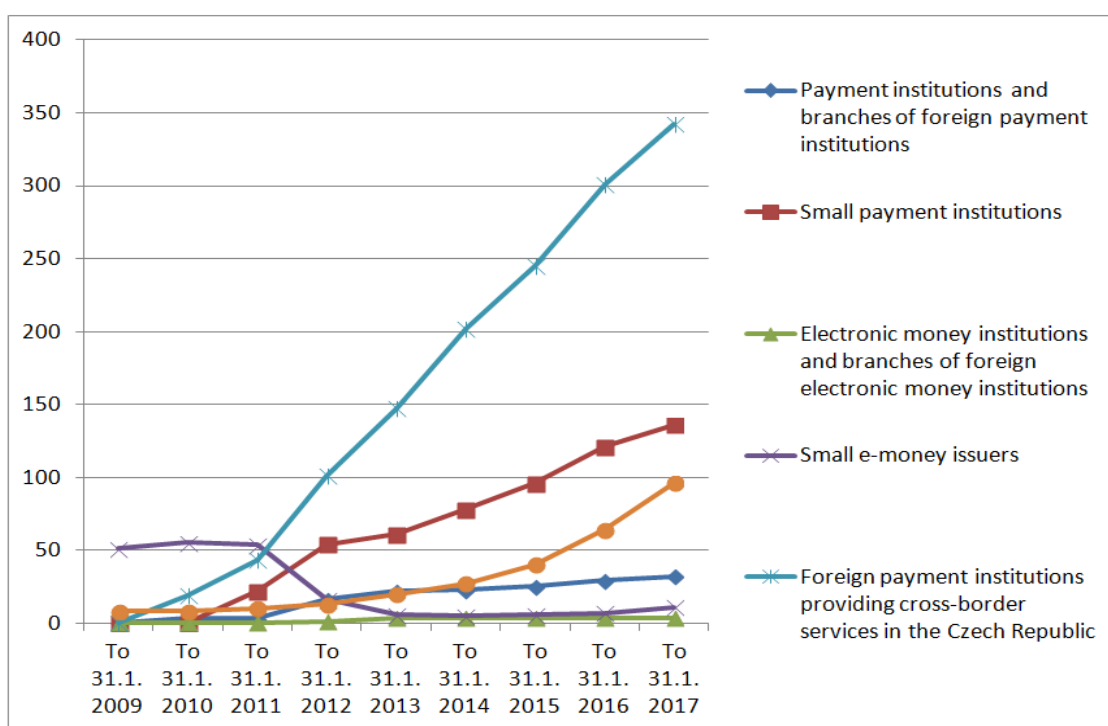
Category	To 31.1. 2009	To 31.1. 2010	To 31.1. 2011	To 31.1. 2012	To 31.1. 2013	To 31.1. 2014	To 31.1. 2015	To 31.1. 2016	To 31.1. 2017
Payment institutions and branches of foreign payment institutions	0	3	3	16	22	23	25	29	32
Small payment institutions	0	0	22	54	61	78	96	121	136
Electronic money institutions and branches of foreign electronic money institutions	0	0	0	1	3	3	3	3	3
Small e-money issuers	51	55	54	16	6	5	6	7	11
Foreign payment institutions providing cross-border services in the Czech Republic	0	19	43	101	147	202	245	301	342
Foreign electronic money institutions providing cross-border services in the Czech Republic	8	8	10	13	20	27	40	64	96

Source: author's own editing from the CNB sources and Final Reports from the impact assessment of the regulation on the proposal of the ZPS. [9]

Table 1 shows that at the end of January 2017 up to 620 non-bank entities could provide payment services. Unfortunately, it is not easy to ascertain from the available sources whether e-money providers have been granted the authorization or registration to provide payment services. However, we assume that they have this registration or authorization, because ZPS allows it. [4, § 46 para 2 point b) and c), respectively § 53 (para 2 and 3)]. 47 banks or branches of foreign banks and 10 savings and credit cooperatives can be added to this.<sup>11</sup>

Graph 1 shows the development of the number of non-banking payment service providers.

<sup>11</sup> Status as of April 2017.

**Graph 1: The development of the number of non-banking payment service providers**

Source: author's own editing from the CNB sources and Final Reports from the impact assessment of the regulation on the proposal of the ZPS. [9]

From the above overview, it can be stated that the number of entities that can provide payment services can be considered sufficient with respect to the number of inhabitants living in the Czech Republic. If we assume that in CR there are 10 578 820 inhabitants in 2016 [7], then to one provider of payment services incl. banks and savings banks it belongs 15 626 citizens, incl. children. Similar considerations could be applied also to the companies. At the same time it can be assumed that not everybody uses or will use the payment service provider, in particular non-banking. Nevertheless, a gradual trend in increasing their numbers can be expected. This can be particularly evident in the category of payment service providers of small payment institutions, which can be attributed to tighter regulation within providing of consumer loan. Especially non-bank providers of these loans are gradually finding new activities that may be related just to the intermediation of funds from the payer to the payee. Last but not least, their growth in 2016 and beyond may affect the validity of PSD II.

Since 2009, there has been a gradual increase in individual categories, with two entities developing differently. It is a foreign payment institution providing cross-border payment services and small payment institutions. A relatively dramatic increase in the number of cross-border entities can be attributed to the clear application of the common European license to payment institutions from the EU host countries, respectively EEA.<sup>12</sup> Interesting was the decline of small-scale e-money issuers. After 2011, they dropped dramatically by as much as by 2/3. This development can be attributed to the fact that after the effectiveness of the PSA

<sup>12</sup> European Economic Area.

many companies, especially carriers or state authorities assumed to issue electronic money or use means of payment with electronic money, but later it became clear that either CNB registration is not necessary, or they left their intention.

### 3. Payment Services and PSD II

The PSD II Directive characterizes payment services in an exhaustive list in Annex 1 as follows [8]:

1. Services enabling inserting cash into a payment account as well as all the operations required for a payment account operating.
2. Services enabling cash withdrawals from a payment account as well as all the operations required for a payment account operating.
3. Implementation of payment transactions, including transfer of funds into a payment account with the user's payment service provider or with another payment service provider:
  - a) execution of direct debits, including one-off direct debits,
  - b) execution of payment transactions by a payment card or a similar instrument,
  - c) execution of payments, including standing orders.
4. Execution of payment transactions for which funds are drawn from credit for payment service users:
  - d) execution of direct debits, including one-off direct debits;
  - e) execution of payment transactions by a payment card or a similar instrument;
  - f) execution of payments, including standing orders.
5. Issuing payment means or accepting payment transactions.
6. Money remittance.
7. Payment initiation services.
8. Account information services.

The draft Payment Transaction Act, which is a response to the PSD II transposition obligation no later than 18 January 2018, in its § 3 [5] exhaustive list of payment services fully accept and a non-cash foreign currency transaction is also be considered as for the payment service, if it is not an activity which is an investment service under the law regulating the business on the capital market.

If we compare the list of payment services by PSD I and PSD II, we can come to this conclusion:

The payment services listed above under ad 1) to (ad 6) are essentially unchanged. PSD II introduces two new payment services, namely the initiation of payment and the account information service. From the original PSD I payment list, falls out the service labeled as "*execution of payment transaction by an electronic communications service provider if the payer's consent to execute a payment transaction is given through an electronic communications instrument.*" [4, § 3 point g)].

What fact did European legislators say that this service has been omitted? In the author's view, this is a method of payment transaction executing that essentially corresponds to a payment service consisting in the transfer of funds at the initiative of payer, payee or by payment card. From the nature of the payment service it does not matter whether the carrier of the payment order is a paper carrier and as a distribution channel is used a stone branch or its collection box or it is an electronic order form filled out in the computer screen when using the Internet or using mobile applications or credit cards. The author of this paper is of the opinion that PSD I has defined payment services more appropriately.



What can you imagine under the Payment Initiation Services (PIS) and Account Information Services (AIS)? Payment initiation service can initiate a payment order at the request of a payment service user in relation to a payment account held with another payment service provider, for example, with the bank. This is a possible innovative way of paying, especially through mobile and internet applications. Although these methods of payment use the classic bank account infrastructure, but unlike normal bank transfers, the payee receives, at the time of the payment order, information on whether there is enough money on his account, so the recipient can already dispatch the goods or provide a service. It is an alternative to card transactions on the Internet. An on-line service is considered to be an account information service providing consolidated information about one or more payment accounts of a payment service user either with another payment service provider or with more than one payment service provider. These services will be run through open application interface programming (API). This will clearly lead to a widening of the range of payment services compared to PSD I. This is therefore a fundamental change when the owner of banking information will not only be banks but end-users who can choose which of the regulated third parties to entrust their information. AIS and PIS operators will therefore radically change the current face of banking, as banks will no longer be privileged players on the market, bringing them up to competition that will be able to offer the same and new services to end-users.

PSD II, respectively the forthcoming ZPS recodification, brings other news. This is in particular the following [6]:

- 1) Strong user authentication.  
Strong user authentication will be required to enter a payment transaction over the internet or another electronic channel. This measure aims to ensure greater security of Internet payments. For strong authentication, a combination of at least 2 validation methods - user-known information (e.g., login information), the item the user has in his / her power (e.g. mobile phone), biometric data (fingerprint or even selfie) are required. The change from the current status is in that the duty of strong verification is given directly by law. Currently, strong client authentication occurs only on a voluntary basis of the recommendations of the European Banking Authority, but that many banks already comply.
- 2) Reduce the user's liability limit in an unauthorized transaction.  
This reduced limit will be used if the payment transaction is due to the use of a lost / stolen card or misuse of the card. A reduction of EUR 150 to EUR 50 represents a significant protection for the cardholder.
- 3) Adjustment of funds blocking.  
So far, funds blocking has not been regulated. Now, for example, when using a self-service petrol station or when booking a hotel, it is only possible to block the amount to which the user has given his / her consent. Once the bank has learned the true amount of the transaction (the actual amount of fuel or hotel services), it must cancel the block.
- 4) Confirmation of funds balance.  
This is an attempt to provide an alternative to classic card schemes. An independent card issuer then collects funds through a standard collection from the consumer's account.
- 5) Electronic identity certificate.  
The Electronic Identification Act, which adapts Regulation (EC) No 910/2014 of the European Parliament and of the Council of 23 July 2014 on electronic identification and trust services for electronic transactions in the internal market and repealing Directive

1999/93 / EC and its requirement: "If a legal provision or the exercise of an identity requires probative function, it is possible to demonstrate the identity using electronic identification only through a qualified electronic identification system (hereinafter referred to as the "Qualified System")" is not identical to the requirement of the identity certificate used by this law . The Payment System Act does not create the obligation to prove identity under the Electronic Identification Act. Thus, the identity of the ZPS can be certified by other means.

As for payment service providers, there are also some changes, namely the extension of the existing set of providers. These are the following newly listed entities:

- payment account manager under the terms of the ZPS,
- foreign payment account administrator under the terms of the ZPS,
- a postal license holder whose postal license explicitly includes a money amount delivery service by postal money order.

What is interesting about this extension is that even though the payment account information service is a payment service, the PSD II and the ZPS suppose that entities providing such services would receive a special permit from CNB. A similar regime applies to this group of providers as to payment institutions, but with certain exceptions. Payment account information providers may also use united European passport. The conditions for granting authorization to the activity of the payment account information provider are similar to those of the payment institution, but the individual person may also be the applicant and the authorization holder. The initial capital is not required against the payment institution, but the management and control system and the credibility and professional competence of the management are required. However, it is assumed that the payment account information managers do not make payment transactions, so their services do not include the liquidity risk. These entities will only have to keep secrecy. In line with PSD II, the proposal of the ZPS includes, as a payment service provider, also the postal license holder, but only within the service consisting in the delivery of the money amount by a postal voucher.

### **Conclusion**

Payment services are now an integral part of the financial services offered by a wide range of payment service providers. The implementation of PSD II into the CR legal order will significantly affect the ways and the extent of their providing. Other payment service providers will be created, incl. new entity – payment account information administrators. As the analysis of the development of these providers showed, their number is constantly increasing. PSD II was published already in 2015, so some entities are preparing for the new conditions well in advance. However, an application for authorization as an account information manager may only be submitted by the applicants after the new ZPS has been effective. The same will apply to obtaining authorization as a PIS payment service provider.

The aim of this paper was to point out using the descriptive analysis method the expected possible changes in payment service providing according to PSD II and the legal status of the entities that will provide payment services after PSD II implementation. This article was based on the hypothesis that "implementation of PSD II will improve the quality of payment services to end-users". The author is of the opinion that the presented study achieved the stated goal and, at the same time, the supported arguments attested the legitimacy of the established hypothesis.

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# **BARRIERS TO CROSS-BORDER PORTFOLIO CAPITAL FLOWS IN THE DIGITAL ERA**

SYLWIA TALAR

## **Abstract**

The aim of this paper is to answer the question how the international movement of portfolio capital is influenced by the digital revolution. The financial market has been already the most globalized area in the world economy. The constraints on cross-border financial flows are the least among others, like goods, services or people (workforce). The fast and multidimensional development of ICT bring about ongoing reduction of obstacle to processing and transferring of information (minimizing information asymmetry), computerization of transaction process and just new phenomenon in the capital flows such as high frequency trading (HFT). It is generally acknowledged that the new ICT remove the time and distance barriers in the world. It could even be interpreted as the lack of barriers to financial capital movement. The paper, taking into account recent research development and analyzing the main features of HFT, indicates existing barriers to portfolio capital flows and describe their changing nature.

## **Keywords**

portfolio investment, digital economy, high frequency trading, ICT, cross-border capital flows barriers

## **JEL Classification**

F20, F65, G11, O33

## **Introduction**

Disruptive changes in the economic environment brought about by ubiquitous use of information and communication technologies (ICT) raise new questions and theses for possible results of on-going transformation. The Internet constitutes a major change of the global level playing field by combining information and communication function and digitisation of content. During the first phase of ICT development and commercial deployment of the Internet, a lot of analyses indicated and stressed that technological progress expands network of global flows, stimulates globalization process in previously unimagined way. In this respect, special attention should be given to the global financial movement which grew just fastest among all other types of flows – more than five times in relation to GDP over the period 1980-2007 (from 4% to 21% of GDP) (Manyika, Bughin and Lund at al., 2014, p. 27). In the second phase, which has started since the beginning of the global financial meltdown, cross-border financial flows have suffered decrease. After the huge down turn, these flows were stabilized at around 5% of GDP in years 2010-2014 (Bussière, J. Schmidt and N. Valla, 2016, p. 5). This trend has also been particularly evident in portfolio investment. Despite systematic rise in the share of global portfolio investment in GDP over the period 1980-2007 (from 1.2% annually in 1980-1989 to 4.2% in 2000-2007) (Rankin, James and McLoughlin, 2014, p. 65-72), the decline that has taken place since the start of the financial crisis seems to be a more permanent phenomenon. Considering these changes, it is also brought on a question on the causes of this situation and especially the real role of digital revolution in the reduction of any type of barriers to international flows.

Technological development has its own features and regularity. The first phase of the implementation of new technological solutions often leads to the exaggerated expectations and their effects may be incorrectly assessed (like it is shown in the Gartner's Hype Cycle). So, we need a deep and continued studies on the impact of current technological progress on the economic processes. The aim of this paper is to answer the question how the digital revolution influences international movement of portfolio capital. Taking into account that fast and multidimensional development of ICT brings about ongoing reduction of obstacle to processing and transferring of information (what is seen as minimizing of information asymmetry) and especially computerization of transaction process (i. e. virtualisation of stock exchanges and online dealing) it is easily understood that new ICT removed the time and distance barriers in the world and other barriers to cross-border portfolio investment. One of entirely new and especially interesting phenomenon in the portfolio capital flows is high frequency trading (HFT) based on automation of decision and transaction process. So, it is a case which is analysing in this paper to show changing nature of barriers to portfolio capital flows. Moreover, the paper provides a review of literature in this field. This contribution should serve to highlight the problem of changes in the character of old phenomena but not replacement of old problems by new ones.

### **1. The literature review**

The capital is widely considered to be the most internationally mobile production factor, in the flow of which there is as a rule no restrictions and the financial market is perceived as the most globalized one (Daniels and Hoose, 2011, p. 10-12). The portfolio investment which commonly comprises trading of securities such as equities or bonds should be the best example of it. This investment based on the Markowitz's portfolio rule (1952, p. 77-91) is characterised by diversification and short-term perspective of capital flows. These make portfolio capital movement more liquid and therefore also more internationally mobile than other types of capital flows. However, many research and observations indicate a certain gap between theory and practice. There is in reality disproportionate domestic concentration in portfolio investment with regard to the level justified by financial theory (e.g. Gregoriou, 2007, ch. 3). This commonly observed phenomenon is named the equity home bias. The preference for home assets despite potential advantages arising from international diversification is also identified as one of the six major puzzles in international macroeconomics (Obtsfeld and Rogoff, 2001, p. 339 - 412).

The statement that there is a lack of transaction (trading) costs in the capital flow and therefore its mobility was undermined even at the very beginning of the 1980s (Gordon and Bovenberg, 1994). Many hypotheses have been emerged in the literature trying to explain the causes of the equity home bias. It has been indicated different factors determining the flows of capital such as behavioral and cultural aspects, regulatory barriers to foreign investment, governance issues, trading costs and combination of all these factors, but the information asymmetry between domestic and foreign investors has been considered to be the most reliable explanations of the shortage of its international mobility. Portes and Rey (2005) reviewed such studies. These analyses have been using various approximate variables of information flows, e.g. the intensity of international telephone calls, number of foreign bank branches or the degree of overlap in trading hours between specified financial centers. In all cases the correlation between information flows and volume of concluded financial transactions was confirmed. Domestic investor is in possession of significantly better and more reliable information, both on the trade volume of the specific financial instruments on the internal market as well as on the market structure, particular companies, institutional and regulatory arrangements, macroeconomic developments and their prospects or he is able to obtain it cheaper and faster than foreign

investor. These information gaps are fairly obvious, but relatively interesting finding of the research is identifying a geographical distance among factors with detrimental effects on the information asymmetry and thus cross-border portfolio flows. Physical distance constitutes a barrier to interaction among economic operators and, more generally, the cultural exchanges. Cultural differences in turn have a negative effects on international economic relations. Portes and Rey (2005) refer to studies in this field. They also in their own research confirm that the gravity model explains determinants of international financial transactions as well as international trade in goods. It follows from this that scale of capital movement depends on size of the market both the investing country and destination country and also transaction costs which in turn are determined by information and efficiency of the transaction technology (Portes and Rey, 2005, p. 269-296; Portes, Rey and Oh, 2001; Coval and Moskowitz, 1999).

When we recognise the information asymmetry as a one of key factors determining cross-border capital flows, the development of ICTs should contribute to a significant increase of the international financial transactions. Hence development of the Internet was included in the gravity model explaining these flows and there was pointed out that it boosts cross-border portfolio flows by reducing information asymmetry among countries (Choi, Rhee and Oh, 2010, p. 35). However, it should be noted that this research is based on data for period before the crisis (1990-2008). Amadi (2004) also examined factors involved in determining international portfolio diversification emphasizing on the effects of information asymmetries and indirect role of the Internet in it. His findings indicate that the Internet has diminished the equity home bias in recent years by giving access to more information to investors. Data used there has been for 1980-2001 - years of consistent increase in cross-border capital movement. The another study (Cooper, Sercu and Vanpée, 2013, p. 289-416) points out that the equity home bias has fallen over time but a little, so the puzzle concerning portfolio investment still remains unsolved. Despite of comprehensive review of literature on this problem, authors of mentioned above paper conclude that the gap in knowlegde about the home bias puzzle still exists.

## **2. Barierrrs to cross-border capital flows from the perspective of high frequency trading (HFT)**

Sweeping changes induced by digital revolution have been influencing not only access to the information but also occurring in transaction technology. Computerization and networking have transformed traditional trading floors into virtual space with server firms. Nowadays, it is enough to have an access to the Internet and relatively small amount of capital in order to invest in different kinds of financial instruments on virtually all markets functioning around the world. This is seen as democratization of a market (anybody can be an investor), an increase in the transparency, turnover and liquidity growth of the various stock exchanges and, at the same time, intensification of international competition triggered by the creation of new markets or trading platforms and introduction of new financial instruments which in turn improve investment opportunities. Connectivity, communication, interaction in the global network, in many cases have already been performing at the speed of light, provide some simple justification for statements about the end of geographical barriers - death of distance as it was named by Cairncross (2001) and the emergence of a "flat world" (Friedman, 2005). These new developments occurring on the financial market are accurately reflected in its characteristics stipulating this market as the global system operating at the speed of light and employing the smartest and most highly paid people around the world (Tapscott and Williams, 2012, p. 17).

Investors adapting to these new conditions and looking for possibilities to reap the benefits of technological advances, have begun to change their investment strategies. There are constructed precise and sophisticated models for investment which in fact take the form of extremely

complicated algorithms implemented in high-function software and are based on not just fundamental and technical analysis, but also wide range of knowledge in such areas as economics, finance, econometrics, statistics and mathematics. These algorithms in combination with other computer technologies take decisions automatically, initiate transactions and execute them precisely and immediately. This new way of exchange was named automated trading or algorithmic trading and its subset is the HFT which currently receives ever larger attention. There is not yet one widely accepted and precise definition of the term of HFT and instead it is thus useful to focus on its most frequent features such as (Aldridge, 2013; Lewis, 2014; ESMA, 2014):

- a) automation of securities trading (order initiation, generation, routing, execution without human),
- b) use sophisticated algorithms (mathematical models) to make trading decision (initiation trading, timing, price, quantity),
- c) proprietary trading,
- d) very short holding periods (seconds or milliseconds),
- e) neutral positions at the end of a trading day,
- f) use of infrastructure, colocation and proximity services to minimise latency.

HFT leads to reducing costs, decreasing the risk of error or misunderstandings very typical for traditional ways of transaction and finally affects efficiency of the capital market. The characteristic that clearly distinguishes the HFT from a broadened category of algorithmic (electronic) trading is the simultaneous automation of transaction and decision process. However particularly interesting is comparison HFT with the traditional investment based on Markowitz's portfolio theory (see table). It is no accident that an „investment“ is currently ever more changed into „trading“.

**Table 1: Differences in the nature of traditional and digital trading of securities (HFT example)**

<b>Parameters</b>	<b>Industrial era</b>	<b>Digital era</b>
Strategy (aim, rule)	Selecting a portfolio (portfolio diversification)	Maximizing returns (strategies diversification)
Strategy (trading dimension)	Global	Local (venue)
Actors (investors)	All	Huge, specialized (owners of hardware and software means)
Traders	Humans	Robots
Competitive advantage (basis)	Being more informed than the rest	Being faster than the rest
Key barriers to mobility of capital	Information asymmetry Transaction costs	Time Space (physics)

Source: Own overview

In relation to the fact, that we are dealing with a light speed in transmitting information between machines, what is at stake here are milliseconds, which wouldn't matter for human. Thus, the physical localization of computer server in the room next to the stock exchange ones (collocation) or placement of a shortest, specially dedicated fibre-optic cable brings about savings of a few thousandths of a second and thus a way to stay ahead of other machines yielding huge profits from that fact (Philips, 2013; Hasbrouck and Saar, 2013; Menkveld, 2013; Grindsted and Skou, 2016). What is seen here as essential in capital movement is speed (time or low-latency) and geography (space) and where are critical elements of trading strategy. This makes that humans spend millions to billions of fixed capital to buy the first access to the



information. The need of huge investment in infrastructure and artificial intelligence undermines democratization of capital market earlier triggered by digital revolution.

### Conclusion

The case of HFT shows, however, that even with a single super high-speed global network not everyone has the same access to the information even if it is public. Time and space barrier is not eliminated at all but our perception of it has only changed. As it turns out, the advantage is not only determined by the algorithms but also the time within which a signal is transmitted between computers of investor and stock exchange. The speed of Internet connections and thus the priority access to the valuable information depends on the availability of equipment, transmission technology and - surprising as it may seem – a geographic distance. The distance barrier reborn in a new dimension is a factor which adversely affects international mobility of capital and on this basis it can be concluded that the use of the Internet has an adverse impact on cross-border portfolio capital flows, but this thesis needs deeper empirical verification. It should furthermore be highlighted that these opposite effects (positive and negative) appear simultaneously, but if investments in financial instruments would be fully replaced or dominated by machines in the future the final impact of the Internet on such trading on foreign markets will be negative too. There are some literature in this field, but comprehensive and complex changes in the nature of capital markets including trading strategies and use of technology should be examined from very different perspectives.

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# **AUTOMATION IN FINANCIAL ADVICE (ROBO ADVICE) IN REGULATORY CONTEXT**

MARTIN VÍCHA

## **Abstract**

The paper tries to describe actual tendencies in the development of the banking and insurance sector in the European Union, specifically in the area of the new phenomenon of automation in financial advice (so called robo-advice) with various ways in which consumers can use automated tools to receive financial advice without or with very limited human intervention. This contribution describes the potential benefits and risks connected with robo advice for ending consumers and financial institutions. It also discusses the demand and supply factors that determine the motivation for usage of the financial automation.

## **Keywords**

Automation, robo-advice, digitalization, FinTech, artificial intelligence

## **JEL Classification**

D53, G2, K23, O3

## **Introduction**

The contribution is focused on the phenomenon of automation in financial advice and describes the potential benefits and risks connected with so called robo – advice for ending consumers and financial institutions and discusses the demand and supply factors that determine the motivation for usage of the financial automation across the banking, insurance and securities financial market sub-sectors. In this respect it brings particular experience from each of the sub-sector and outlines the potential trends estimation and the findings and observations of several relevant industry surveys and following discussion in article 4. The practical experience raised by new survey on an example of the insurance industry in Czech Republic is mentioned.

Robo - advice theme is nestled into the regulatory context, represented mainly by the observations of the European Supervisory Authorities (ESAs - European Banking Authority, European Insurance and Occupational Pensions Authority, and European Securities and Markets Authority) within discussion paper and consequent final report and by several commercial surveys that confirm the findings. It is integrated into the so-called financial technology area (FinTech).

European Supervisory Authorities (ESAs) is powered to monitor new and existing financial activities, and is ready to adopt measures and to promote the safety and soundness of markets and convergence in regulatory practice and monitoring of the financial innovations. It is powered to decide which, if any, regulatory and/or supervisory action is required, if necessary [Joint Committee ESAs, 2015, Discussion Paper].

FinTech is attracting increasing attention from consumers, investors, the investment management (securities) industry and regulators across the globe. The Joint Committee of the ESAs requested comments on a Discussion Paper on the topic of automation in financial advice.

The Discussion Paper presented a preliminary assessment of the main characteristics of automated financial advice tools as well as their potential benefits, costs, and risks [CFA Institute, 2016, Fintech Survey Report].

Therefore this regulatory background documentation was used as a certain follow up for opening further discussion in this contribution.

The phenomenon of the automation in financial advice has emerged on a background of a lack of clarity in the existing legislative framework and inconsistent regulatory treatment and a lot of definitions on term “advice” across the three sectors exist [Joint Committee ESAs, 2015, Discussion Paper].

### **Definitions**

As the examples term “advice” in insurance industry means “the provision of a personal recommendation to a consumer, either upon their request or at the initiative of the insurance distributor in respect of one or more insurance contracts” [European Parliament, 2016, Insurance Distribution Directive EU 2016/97], or similarly in securities industry as “investment advice” means the “provision of personal recommendations to a client, either upon its request or at the initiative of the investment firm, in respect of one or more transactions relating to financial instruments” [European Parliament, 2014, Directive on markets in financial instruments 2014/65/EU].

From the regulatory ESAs’ point of view as regard to the phenomenon of the automation in financial advice the term “advice” is used in its common meaning of the word, as “an opinion or recommendation as to the appropriate choice of action” [ESAs, 2016, Report on automation in financial advice]. It means it is not relevant whether or not the provider of the service qualifies that service as ‘advice’ (e.g. applying existing legal definitions). Important is the nature and context of the information that is presented by the automation tool, and whether the consumer could reasonably perceive the output to be advice [Joint Committee ESAs, 2015, Discussion Paper].

### **Robo advice tools characteristics**

The basic characteristics to determine the financial advice as automated are as follows: usage of the automated tool, work with such algorithm and the “advice” as outcome of the used tool [ESAs, 2016, Report on automation in financial advice].

The automated tool (automated advisor, robo-advisor) is used directly by the consumer, without (or with very limited) human intervention; e.g. it represents more the consumer facing tools rather than advisor facing tools. We can differ between fully automated tools (normally used in securities sector, non-life insurance industries) and partly automated processes (regularly used in banking sector for the mortgages, loans, savings accounts), where advice on the products and providing client by contact details are necessary and personal meeting of the advisor with the ending consumer is a must for final conclusion of the contract.

An algorithms, for example decision tree or sequence of scripted questions, uses information provided by the consumer to produce an output as advice regarding the recommendations based on the consumer's specific responses. Such a provided advice is reliant on two key inputs: first are personal information, e.g. objective data, such as age, job, monthly income, number of children, etc. and subjective data, such as the consumer’s investment goal, financial condition, risk tolerance, level of knowledge and experience, etc. and second are the logic of the final

algorithm, which ‘decides’ which products or services should then be recommended to the ending consumer.

As regard to output of the automated tool is, or is perceived to be, financial advice representing limited range of products or services e.g. output of the tool will be limited with profiling the consumers, as it is risk-profiling-tools, investment horizon definition etc.

### **1. Benefits and risks of automation advice**

ESAs recognizes following benefits of automation advice as reduced costs for both consumers and financial institutions, primarily easy access to more products and services to a wider range of consumers and wider client base for financial institutions and improved quality of the service provided, based on the most up-to date market information [Joint Committee ESAs, 2015, Discussion Paper]. ESAs also concluded that the benefits of automated advice that had been identified are accurate but might currently not yet be fully realized due to the early stages of the development of the phenomenon [ESAs, 2016, Report on automation in financial advice].

ESAs recognizes following risks of automation advice as consumers having limited access to information and/or limited ability to process that information, because of the uncertainty how the data they have inputted is used by the tool, what information is presented to the consumer and how that information is presented, which can lead to the risk of consumers receiving unsuitable advice [Joint Committee ESAs, 2015, Discussion Paper]. This is perceived as mis-selling risk.

The further possible risk is represented by flaws in the functioning of the tool itself due to errors, hacking or manipulation of the algorithm, thus financial institutions would be more exposed to litigation and subsequent reputational risk due to faulty automation.

There are more possible risks as legal disputes arising due to unclear allocation of liability and the widespread use of automated tools, but ESAs recognized automation in advice is not widespread yet, therefore there is low risk that consumers may no longer be given the opportunity to access any human financial advice due to financial automation, because fully automated advice is not to be widespread [ESAs, 2016, Report on automation in financial advice].

Nevertheless, for example in insurance industry in Czech Republic, according to Willis Towers Watson Survey, “the majority of those surveyed clearly expect the move towards digitalization and automation of processes”, and the connected new technologies having a significant impact on insurers’ business models, but “even business innovations common elsewhere, such as price comparison websites, sometimes known as aggregators, have had very limited success in the Czech Republic so far” [Willis Towers Watson, 2017, Czech insurance market in 2020, page 11].

### **Benefits and risks to consumers**

When we are specifically talking about benefits to customers the key benefits are related to cost, when consumers can pay less when they receive advice through automated tools. Consumers also can benefit from better consumer access to advice through automated tools and can have access to a wider range of service providers using those automated advice tools. Moreover consumers can obtain financial advice in a faster, easier and non-time-consuming way.

The quality of service is to be improved, because consumers can receive more consistent advice when they use automated tools, based on most up-to-date market information and can find it easier to keep a record of the advisory process.

When we specifically consider the risks to consumers, they could make unsuitable decisions as a result of lack of information on inputs and functioning of the tools and unclear information about the extent to which the tool produces recommendations tailored to them.

As regard to risks related to flaws in the functioning of the tool, consumers make unsuitable decisions because of limitations or assumptions within the tool, errors in the tool, tool they use is hacked and the underlying algorithm is manipulated, or lack motivation to act on advice given by automated tools where such tools do not facilitate an end-to-end process.

Risks related to a widespread use of automated financial advice tools represent situation when consumers lose out as a result of automated advice tools being based on similar algorithms, resulting in many consumers taking the same actions in relation to the same types of products or services and that consumers may no longer be given the opportunity to access any human financial advice.

According to CFA Institute survey respondents from EU countries are more likely (73% vs 60%) to think that automated financial advice tools can provide positive impact on access to advice compared with those from non-EU countries [CFA Institute, 2016, Fintech Survey Report].

As a comparison in Czech insurance industry “72% believe that ‘strengthening the customer relationship and experience’ will be a highly important market trend in the next 5 years”, but “two in three respondents do not believe that superior customer service will be among even the three most important factors”, for success. [Willis Towers Watson, 2017, Czech insurance market in 2020, page 13].

### **Benefits and risks to financial institutions**

When we are specifically talking about benefits to financial institutions the key benefits are also related to cost similarly as in consumer case, because financial institutions incur fewer costs to deliver financial advice to end consumer.

Financial institutions also benefit from the size of the potential client base and the quality of service, if they provide advice through automated tools, due to wider range of consumers, delivering consistent consumer experience and more easily auditable processes.

On the other hand there are inherent risks to financial institutions as related to functioning of the tool and legal disputes arising from unclear allocation of liability. They are exposed to litigation and subsequent reputational risks due to faulty automation.

If providers of automated advice tools also offer consumers the possibility to engage with a human advisor as an alternative means to obtain advice, consumers may overuse that alternative means so as to supplement the automated advice on the product or service.

## **2. Demand, supply and other factors determining robo advice**

Many market demand and supply factors have influence on the future development, how the financial automation will be extended. Technology focused start-ups and new market entrants

innovate the products and services, currently provided by the traditional financial services industry. Funding of FinTech start-ups more than doubled in 2015 reaching \$12.2bn, up from \$5.6bn in 2014 [EY, 2016 Innovating with RegTech].

### **Demand and supply factors**

Combining the ESAs observations the customer preference for using technical innovations and automated procedures to manage their finances comparing to preferring to engage with a human advisor and the extent to which an online culture exists within the various jurisdictions of the EU will be the main demand factors.

General move towards paper-less transactions and records, reducing costs for providers and providing a more convenient option for consumers for storing and easily retrieving or referring back to important financial documents are key supply factors for enhancement of the financial automation.

Emergence of new models that provide investment advice online remains intense interest in developing automated advice business models. Providers also may be proceeding with caution due to concerns about future liability and perceptions of regulatory risk.

Regarding the expectations, in terms of direct channels „95% respondents believe share of direct channel will remain under 30%, and 70% do not anticipate direct taking more than 20%“ [Willis Towers Watson, 2017, Czech insurance market in 2020, page 15].

### **Other factors**

Besides the market demand and supply factors influencing the future of the robo advice there are many other factors that will co-create the environment for the development of the robo advice and other forms of the artificial intelligence tools within the financial markets as to provide automated tools to support face-to-face investment advice, or to provide automated online advice with the possibility of interaction with provider's staff.

Legislation about the conclusion of contracts may be seen as a barrier for the development of automated financial advice tools. If such legislation states that all contracts for supplying financial services and financial auxiliary services shall be made in writing, human intervention may be necessary in order to conclude a contract for financial services and financial auxiliary services.

Even where legislation provides for the possibility for contracts to be concluded through the use of an advanced electronic signature, this need may lead to the avoidance of automated advice if consumers are not aware of how to use this technology or providers do not make such technology readily available [Joint Committee ESAs, 2015, Discussion Paper].

There are also debates on data privacy and ways of usage of the personal data in light of the forthcoming General Data Protection Regulation or cyber security topics related to robo advice. “For regulators, this implies that data security and use will be more important than ever before for consumer protection, prudential regulation will focus on algorithm compliance, and financial stability will also be concerned with financial and information networks. The emergence of FinTech companies, combined with the wider use of regulatory sandboxes, offers a unique opportunity to pilot this novel kind of regulatory architecture that is proportionate, efficient and data-driven before market-wide implementation. FinTech requires RegTech” [Arner, 2016, FinTech, RegTech and the Reconceptualization of Financial regulation].

### 3. Discussion on market observations on robo advice

There are a couple of the real observations across the three subsectors in terms of the usage of robo advice and such form of the artificial intelligence (AI) tools and FinTech paradigm.

„Artificial intelligence technology has experienced rapid progress in recent years thanks in large part to several deep-pocketed tech titans that view artificial intelligence as an integral part of their business models. Companies such as Amazon, Apple, Baidu, Facebook, Google, and Microsoft have entered into what some call an AI arms race, competing for elite engineers, buying start-ups and establishing laboratories” [Institute of International Finance, 2016, Digitizing Intelligence: AI, Robots and the Future of Finance].

From ESAs Joint Committee’s Discussion paper and ESAs Final report follows that in insurance and pensions sectors we can see new business models have emerged that provide online independent financial advisory services that use algorithms to select pension investments for savers.

In insurance industry some insurance undertakings’ websites propose a personalized quote to the consumer on the basis of a questionnaire and unit-linked life insurance products and pure protection products (such as health, travel, property, household, vehicle and accident insurance, general and pension life assurance products) can be purchased online in many EU jurisdictions. “Being customer-centric is the stated ambition of most insurers”, or “insurers aim to treat customers as individuals in providing custom-made offers, in part by making greater use of advanced data analytics to try to understand their customers better” [Willis Towers Watson, 2017, Czech insurance market in 2020, page 13].

Insurance provider and intermediary sites offer the facility for consumers to seek a quote and purchase insurance online. These sites request information from the consumer for the purposes of calculating a quote and should the consumer wish to continue he/she must provide further more detailed information, usually in a questionnaire format. At this point, the site will offer either one product or a range of products that suit the consumer’s needs. The consumer can then select the product he/she wishes to purchase and complete the process online [ESAs, 2016, Report on automation in financial advice].

“In life insurance, intermediaries (whether tied agents or financial advisors) are expected to remain dominant”, it is interesting that 21% respondents expect financial advisors to have a share of sales in excess of 50%, while 27% expect it to be under 20%. Also in non-life insurance, insurers’ exclusive networks, including branches of the companies, employed salesforces and tied agents will remain the dominant means of sales [Willis Towers Watson, 2017, Czech insurance market in 2020, page 15].

In banking sector human contact is supported more and more by the use of various automated tools. These tools include comparison websites that can compare products offered by various financial institutions, and websites providing information on specific products and helping consumers to select between products by using simulators and calculators, the use of such tools has been observed in relation to products such as mortgages, personal loans, bank accounts and bank deposits. These tools may allow consumers to finalize a purchase, conclude a contract, or act as intermediaries which, after giving recommendation, help the consumer to get in touch with the financial institution offering the given products or services [ESAs, 2016, Report on automation in financial advice].



In securities sector automated tools are used as a type of financial adviser, often referred to as a „robo-adviser”, automated tool asks prospective investors for information about their specific circumstances and, based on the answers provided, an algorithm is used to recommend transactions in financial instruments that match the customer’s profile. Different automated tools may be used to support different parts of the advice process, as the collection of information, risk profiling, portfolio analysis, and order processing or trading [ESAs, 2016, Report on automation in financial advice].

According to Accenture survey robo-advice will, however, ultimately have an outsized impact on the wealth management business, accelerate the process of fee compression, to put pressure on the market price for many services. Robo-advice will also give wealth management firms access to a large new market of millennials who are interested in accumulating wealth, but have had only limited options in terms of investment management. Despite the quick uptake of robo-advice services among wealth management firms and individual investors, their share of assets under management is quite small. Robo-advice will not suit every investor [Accenture, 2015, The Rise of Robo-Advice, Changing the Concept of Wealth Management].

On the other hand according to ESAs observation the consumer awareness of automated financial advice tools seems to be low and financial literacy of consumers has been shown to be limited. For example “80% respondents felt that policyholders often do not understand the nature of the product they are buying” [Willis Towers Watson, 2017, Czech insurance market in 2020, page 13]. Many consumers also may prefer to deal with natural persons in order to obtain advice rather than with automated tools.

“Driven by significant advances in technological capabilities, the explosion of big data, more powerful software, and low cost, scalable cloud computing, artificial intelligence appears to finally be at a real tipping point. Technology-induced competition will force further innovation and an expansion of artificial intelligence applications in use today” [Institute of International Finance, 2016, Digitizing Intelligence: AI, Robots and the Future of Finance].

Automated financial advice tools are generally aimed at internet-minded consumers and at consumers who already have an expertise in the financial sector of the product in question. Nevertheless, consumers might still use automated tools; they seek information on a given market even if the final decision is made through a human advisor (sometimes it is called as ROPO approach – Research On-line, Purchase Off-line).

When we are talking about regulation of the automation in financial advice, we also should take into account the activities related to support of tools how to be more in compliance with those requirements. As a reaction to the FinTech industry and robo advice the new sub-sector of the FinTech is developing, so called RegTech. This sub-phenomenon should ensure the market participants are conducting the financial services and products in alignment with the regulatory requirements and challenges.

“Successfully complying with the multitude of financial services regulations can be a complex, time-consuming and costly activity for firms. Industry participants and the UK regulator, the Financial Conduct Authority (FCA), are considering how to develop and adopt regulatory technologies (RegTech) to meet and simplify regulatory compliance requirements”, or “RegTech presents an opportunity to rethink how we approach and solve many intractable problems. By adopting a more creative and innovative approach to addressing some of the industry’s regulatory challenges, RegTech might inform us on new ways of working that deliver

more efficient processes with better regulatory outcomes” [EY, 2016, Innovating with RegTech].

“Disruption of the financial services industry is happening and FinTech is the driver. It reshapes the way companies and consumers engage by altering how, when and where financial services and products are provided. Success is driven by the ability to improve customer experience and meet changing customer needs” [pwc, 2016, Blurred lines: How FinTech is shaping Financial Services, Global FinTech Report].

“FinTech could become one of the most powerful tools to support small businesses and thus stimulate sustainable economic growth. With their integration into the entire FinTech ecosystem, small businesses can participate in many solutions that were previously only available to larger companies. FinTech providers should aim to become collaborative partners, comply with regulation, act transparently and become even more coordinated in the medium term [World Economic Forum. October 2015, The Future of FinTech, A Paradigm Shift in Small Business Finance].

### **Conclusion**

It is visible growing number of consumers use automated tools when managing their finances, to monitor their money, to obtain financial information or education, to compare the costs, features and benefits of different products or different providers and to purchase products or services, or are searching recommendations or advice prior to purchasing or selling financial products or services.

The market participants predominantly use automation and technology in general, making human advice more efficient, widely available and cost-effective.

Automation in financial industry is becoming more prevalent, particularly mainly in securities sector and in the non-life insurance sector. Some advice services are entirely automated, whereas other services foresee human interaction between the consumer and the advice provider at some stage.

The phenomenon of the automation in financial advice, in different forms of the robo-advice, FinTech tools or usage of the artificial intelligence has the potential to continue to grow. Potential benefits and risks of automation in financial advice had been described in this contribution. The phenomenon is currently not equally widespread across the three sectors or across all EU jurisdictions. On an example of the insurance industry, specifically in Czech Republic, is visible, that there is much longer path to full automation.

There are several critical limitations for widespread usage of the automation in financial advice: financial literacy of ending consumers and complexity and uncertainty of the used algorithms. Therefore, each of the algorithms should be validated or somehow attested before they will be launching to ending consumer.

In my opinion in 10 years horizon we could estimate that vast majority of the financial services will have sufficient artificial intelligence tools for providing the simple products and services and most of the processes will be automated. Definitely it does not mean that role of the human intervention will be suppressed. It is a question on finding the proper process and efficient product provided for fair price relevant to specific distribution channel and ending consumer.

I also mean that RegTech industry as a subset of FinTech phenomenon represented also by robo advice tools could grow to support the providers and intermediaries to be compliant with all the growing regulatory challenges.

The further topics for next discussion outside this contribution's scope could be related to possible technological unemployment or development of new kind of job positions (that would be able to ensure algorithms validation, programming and testing etc.).

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# FINANCIAL SECTOR TAXATION

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## Abstract

Taxation of the financial sector covers a wide range of topics, including but not limited to the taxation of financial institutions and financial services, but also related regulation of each of the financial markets. The failure of financial markets called for a need of a comprehensive approach to the taxation of the financial sector while taking into account the current and potential concepts of corporate income tax and valued-added tax that themselves may pose some problems. This also includes the issue of financial transaction and financial activities taxation and bank levy. The importance of this topic in the Czech Republic will be underlined in the upcoming general elections. The aim of this paper is to design a system of rational taxation of the Czech financial sector for the upcoming period, while considering the Czech specifics.

## Keywords

corporate income tax, value-added tax, financial activities tax, financial transaction tax, bank levy, double taxation of dividends

## JEL Classification

H25, G20, G28

## Introduction

Taxation of the financial sector and its main sector – banking – remains a topical issue despite that fact that the global financial crisis has already been averted. In the Czech Republic, the issue of bank levy as a “sectorial tax” was recently brought on the table in the election program of the Czech Social-Democratic Party. In the EU, there are still efforts to introduce a financial transactions tax. The fundamental issues of value-added tax are also being discussed where a non-standard regime in field of the financial sector continues to exist. For these reasons, it is useful to review comprehensively the overall concept of the financial sector taxation. The aim of this paper is to find a system-wide solution of the financial sector taxation while considering any Czech specifics. It seems useful to start our analysis of this problem with an overview of the theory and policy of the corporate income tax. Then the value-added taxation follows, which in EU is widely regulated, with a major impact on financial services and with a resultant need to find a substitute solution. Next follow-up issue is a possible use of taxes or levies for the regulation of some financial products and for the fund formation or banking crises costs compensation.

## 1. Corporate Income Taxation

The emergence of modern tax systems can be dated back to the end of 19<sup>th</sup> century. The Austrian reform of direct taxes of 1896 affected also the private financial sector; all joint-stock companies were subject to the “tax from earnings of businesses keeping public books“. The joint-stock companies were understood to be businesses with extraordinary ability to pay – and if they post high (higher) revenues they must pay a progressive tax. Under the first Czechoslovak Republic, the taxation of joint-stock companies was regulated by the Act on Direct Taxes of 1927. The basic rate of the “special earnings tax” amounted to 8% from the

profit and in addition, "profitability surcharge" with rates from 2% to 6% from the profit if the business posted rate of return exceeding 6% (rate of 2%), or up to 14% (rate 6%) was imposed on joint-stock and similar companies; the rate of return was calculated from the profit-to-capital ratio. In principle, this concept of the taxation of joint-stock companies was derived from the material bearability of taxation: the tax should not be assessed on the absolute but relative return that is based on the return in proportion to the working capital (Engliš, 1946).

After the World War II, the corporate income taxation in market economies grew significantly; the opposite trend regarding corporation income tax rates started in 1980's in connection with the emergence of globalization tendencies. This trend has continued until present day: in the EU countries, the average (non-weighted) statutory tax of this tax dropped from 30.4% in 2001 to 22.5% in 2016. In terms of our topic, it is also important that corporate income tax rates are generally lower in smaller countries.

The classic theory of corporate income tax is based on the application of ability to pay principle; this tax contributes to the total progressivity of the tax system. To the contrary, the neo-liberal tax theory fully refuses the existence of corporate income tax. "Business does not and cannot pay taxes. Only people can pay taxes" (Friedman, 1971). Neoliberals speak of the "double taxation of dividends" which occurs at the concurrence of corporate income tax and taxation of dividends as income of natural persons (e.g. in the form of a withholding tax).

BMF (2016) compares the taxation of dividends in Europe and in the North America in the form of corporate income tax and the follow-up taxes from dividend incomes of natural persons in 2015. We may infer from the comparison and the information above that the rate of the Czech corporate income tax (19%) is moderately below average, which generally corresponds with the international "rule" of lower taxation of corporate income in smaller countries. However, the rate of taxation of income from dividends, i.e. from any capital income (15 %) could be higher, e.g. 25%. For instance, the rate 25% is applicable in Germany. In the Czech Republic, we do not count with the application of neo-liberal tax theory and policy – since it has little prevalence in the world. Therefore, we base our assumption on the legitimacy of "double taxation" of dividends – and our approach to the taxation of interest expenses of corporations and of personal interest incomes must be adjusted to this.

## 2. Value-Added Taxation

The post-war tax theory arrived at the necessity to replace a relatively easy, but not "competitively neutral" general turnover tax with either a general tax from the "net" turnover, or one-phase turnover tax (tax from the sale to the "final" consumer or seller). Strictly speaking, one-phase turnover tax is currently applied basically only in the USA. In other countries, a tax from the net turnover prevailed, particularly in the form of an (indirect) value-added tax (VAT) with several rates, differentiated by products. The VAT system developed in 1960's and implemented by EEC Directive of 1967 has become the basic model of the taxation of consumption all over the world. In addition to its conceptual benefits, this system surely has also its shortcomings, i.e. due to its administrative demands and that it creates room for tax frauds.

From the perspective of neutrality of the taxation of financial sector, it would be optimal if the value-added tax also applied to products and services of the whole financial sector. „The economically neutral application of VAT to financial services requires their inclusion within the tax base as fully as possible” (Merrill, 2011). However, this is not the case anywhere in the world. In the New Zealand, but also in the South Africa these services are subject to VAT, but

their rate is zero. With the result being an actual full subsidising of financial services – as even these VAT payers may fully deduct the tax included in prices of the purchased products and services. On the contrary, in China (and Taiwan, too) financial services are taxed by a positive VAT rate (6 %, or 2% in Taiwan /at VAT standard rate of 5%/). In China, life insurance with a duration of more than one year and a guarantee for refund of the original contributions is exempt from the tax.

The treatment of financial services when these services are in principle exempt from VAT, is one of the shortcomings of the existing system of the value-added tax; it also means an impossibility of deduction of the tax included in prices of products purchased by relevant businesses. (In practice, this has a negative impact in the insurance of businesses.) This different attitude to financial services is explained by the specifics of financial services, or payments for these services. For some products, the administrative procedures may be more complex, however the same applies to other sectors of economy. Many theoreticians and lobbyists have issues with the margin-based taxation of financial services. The margin, e.g. interest spread, alone represents an added value; the fundamental problem is allegedly the "separation" of the margin into the part relevant to the transaction with the supplier (deposit) and the customer (loan). In this regard, it must be said that the entire business is ultimately based on margins and secondly, the concept of the value-added tax which is being used taxes the added value indirectly – it is a taxation of turnover, with a tax deduction included in inputs (credit method). From the calculation perspective, it is fully irrelevant whether the bank fee or commission or the charged interest is taxed.

The EU attitude to the taxation of financial services in the form of VAT is inadequately conceptual and pervasive. It may be caused by the existence of diverging interests, including the lobbying influence. Moreover, further progress in this area has its limitations given the basic VAT design elements as it was conceived dozens of years ago when there were no PCs and financial services had less prominent role than today. In any case, it would be useful to consider a major reform of VAT, particularly a transition to the subtraction-method value-added tax which is used in Japan. Apart from being fully technically compliant with the financial sector, it is much simpler. Current approaches to VAT, not only in the EU mean that the taxation of financial services by this tax is highly insufficient with big differentiation, e.g. regarding supplies for businesses (B2B) and for end users (B2C). An integration of financial services into the value-added tax base is a generally optimal solution (Chaudhry et al., 2014). However, this solution under the current conditions of the EU is a run in the long-time perspective and practically we are left with nothing but looking for an available solution which is not in conflict with the existing EU regulations, while making use of experience from other EU countries, if possible. In this sense, the search for an "alternative taxation" of the added value in the financial sector is fully legitimate – and means the need for an additional, separate taxation of financial services or financial sector.

### **3. Financial Activities Taxation**

As a part of the financial sector reforms, IMF (2010) recommended to introduce a financial activities tax (FAT), as a potential supplement to the bank levy which must be solved in relation to the problem of VAT. The IMF report considers three alternative FAT concepts:

- FAT 1: taxation of the volume of wages and profits of companies (addition-method FAT);
- FAT 2: taxation of the "rent" in the form of excessive wages and profits or taxation of earnings over general rates of relevant taxes in other sectors of economy; for wages the relevant threshold would be the wages and bonuses above the level of similarly

demanding industries from the qualification point of view, with regard to the profit, it would be an excess above "normal profit" (rent-taxing FAT);

- FAT 3: taxation of revenues of highly risky financial activities (risk-taking FAT).

The first FAT alternative is applied in many countries in relation to full or significant exemption of financial sector, or financial services from the value added tax. E.g. Denmark uses this method to tax wages not only in the financial sector. France takes similar approach. Approx. 20 EU Member States have an insurance tax or a similar tax. Overall, it can be said that almost all EU Member State has some taxation of financial activities, however not all of them specify this taxation as an alternative solution for VAT.

The second FAT alternative in the form of taxation of "excessive" bonuses of managers is applied, or was applied in 4 countries from the sample of EU Member States and another 4 countries, FAT 2 was introduced in response to the financial crisis. Great Britain (2010/2011 fiscal year) and France introduced a temporary tax (for one year) from bonuses in the financial sector, both at 50% rate from amounts exceeding GBP 25,000 or EUR 27,500 respectively. The reason of the introduction of FAT 2 is generally known: failure of business management, or corporate governance in the face of the implementation of extraordinary regulatory measures. However, it is hard to imagine that most of governments would want FAT 2 to become a general tax system component.

The third FAT alternative is outside the mainstream of the professional and political discourse. The experience of Denmark with the financial activities tax is rather interesting (Sørensen, 2011). Banking industry, mortgages, insurance and pension funds are subject to the tax. The wages, including contributions to pension funds and other benefits and bonuses are taxed. The current tax rate is 10.5% and the total yield represents 0.25-0.3% of GDP. The Danish experience (Sørensen, 2011) shows that:

- FAT can be implemented as an (imperfect) replacement for the non-existent VAT from financial services
- If FAT rate is moderate, there is no reason to fear that the tax would suppress activities of the financial sector
- An internationally coordinated FAT would increase yield potential of the tax
- There are not convincing arguments for the exclusion of profits from the tax base.

With regard of the profit as part of the FAT tax base, Sørensen (2011) proposes to use the tax base for the corporate income tax, reduced for the imputed yield from shares.

In Germany, a repeal of VAT exemption (at a rate of 19%) for the financial sector would generate similar revenues and welfare effects as a 4% FAT (Büttner and Erbe, 2014). We may infer from it that the rate of the replacement tax for VAT could range from 4% to 5% from the wage costs and from the profit in the Czech Republic. For the implementation, the assessment base for general health insurance contributions and the corporate income tax base could be used. Using this form, the missing taxation of financial services within the value-added tax could be globally and, what is even more important, quickly replaced. The financial activities tax in this form is in fact a direct taxation of added value when providing financial services (in the financial sector). The Czech Republic needs to introduce an alternative tax for the VAT to remove the entirely insufficient taxation of financial services, or financial sector as a whole.

#### 4. Financial Transaction Taxation

Generally speaking, the object of the financial transaction tax (FTT) is the gross turnover in this area; conversely, the financial activities taxation may be conceived as a taxation of the added value in the field of financial services. From the perspective of the theory of public finance, we should differentiate between the fee for performing the financial transaction which may generally correspond to the costs for brokered financial transaction and FTT as such, which is designed as "regulatory fee" – instrument of financial regulation with an aim to reduce the number of financial transactions. Here, we are specifically interested in the financial transaction taxation in the narrower sense of the regulatory fee.

Over the last 25 years, there has been a significant growth of financial transactions in the world, particularly due to new derivative products. The derivative markets have developed much faster than the nominal GDP. To large extent, this was caused by speculative activities (Schulmeister, 2010). The purpose of the financial transaction taxation is to curtail speculative activities. This is a highly controversial topic, as the taxation is a competitive or additional instrument to the direct regulation of financial markets; and the tax may also have a hard impact on common, standard financial operations. The financial crisis greatly increased the interest in the problem of financial transaction taxation. According to IMF (2010), in many G-20 countries, there is a wide array of FTT concepts in many forms, with rates at 10-50 base points, however in many shapes and sizes with difficult-to-trace effects on financial markets.

It is often stressed that in today's globalized world, in principle, there would have to be a single FTT, should it not have more deformation than positive effects. The study of IMF and other major institutions were against the introduction of a "generalised" FTT. (IMF 2010, EC 2010). One of the arguments is that the yield from this tax would concentrate in few countries (Honohan and Yoder 2010).

In the EU, FTT received high support of German and French governments, and was strongly refused by e.g. the British and Swedish governments – for fear of relocation of financial markets outside the EU; however, the governments of these countries are not against a world-wide FTT. In its Resolution of 25 March 2010, the European Parliament pleaded for the introduction of the bank levy and the financial transaction tax. „In 2011, the European Commission put forth a legislative proposal for a common system of financial transaction taxes in the European Union. The proposal did not gather unanimity among all Member States and eleven asked to go ahead under the so-called enhanced cooperation procedure. In parallel, countries such as France and Italy have introduced their own taxes, while others of the group of eleven already had an FTT in place (Belgium and Greece). Discussions between Member States on the final design of the financial transaction tax are progressing, but to date no final decision has been made“ (Hemmelgarn et al., 2016). According to the original draft, FTT should be introduced in 11 Member States (AT, BE, DE, EE, ES, EL, FR, IT, PT, SI, SK, without the participation of the Czech Republic) by 2014. The last announced deadline for the conclusion of agreement of these states regarding the introduction of a single FTT expired last year. In the „narrower“ sense, this FTT should tax (EC, 2014):

- Securities trading (shares and bonds)
  - 0.1% of the market price
  - to be paid by financial institutions involved
  - to be paid by purchasers and sellers (in case both were financial institutions)
- Derivatives agreements and "financial-market bets"
  - 0.01% of the notional amount underlying the product
  - to be paid by financial institutions involved



- to be paid by all parties (in case they were financial institutions)

The European Commission is of the opinion that those who want to serve the EU11 market will have to pay the FTT. EU11 is "too big" a market for not being served by financial institutions. So, we will see what comes out of it. If it works, we should join.

### **5. Bank Levy**

The financial crisis originated in the USA in 2007 and its fiscal and macroeconomic consequences were huge and strongly differentiated from country to country. The systemic banking crisis, connected with significant losses and intervention in the banking sector fully affected 13 countries, the USA and Great Britain, the Netherlands, Germany and Austria to name a few. Other 10 countries are deemed borderline cases, they include France, Sweden, Switzerland, Hungary, Greece and Russia. The direct net fiscal cost of rescuing the banking sector in 2007-2009 was moderate on average in the developed countries - less than 3% of GDP; however, in the most affected countries they amounted to 4-6% of GDP. Indirect fiscal costs, including provided guarantees, were much higher, in the developed countries they averaged around 25% of GDP - during the crisis. Subsequently, in 2008-2015, public debt in the advanced G-20 countries was expected to increase by almost 40% of GDP (Claessens et al., 2010).

In response to these impacts of the banking or financial crisis, proposals to introduce regulatory levies with primary purpose to additionally distribute the cost of the crisis across the banking or financial sector or to create reserves or fiscal income for future potential similar public expenditures were made. IMF (2010) recommended to introduce Financial Stability Contribution (FSC), referred to as bank tax/levy and collected from balance-sheet items of all financial institutions. In the first stage, tax rates would be differentiated by financial institutions, then they should be differentiated according to the risk of individual institutions, including the systemic risk associated with individual financial institutions. The IMF study emphasises the need for international co-operation, particularly from the point of view of cross-border financial activities. Effective co-operation does not require full uniformity but an agreement on principles, including the tax base and minimum rates of FSC.

In May 2010, the EU Commission proposed to set up national parafiscal funds with a FSC-type bank levy to finance future crises in the banking sector. All within the overall system of banking sector regulation. In June 2010, the European Council agreed to introduce taxation of financial institutions within the same general regulatory framework. The Czech Republic (as the sole state) has reserved the right not to impose a bank levy or other financial sector taxation. At the same time, the Commission's proposal for a uniform procedure in the area of bank levy, assuming the creation of a fund (at the EU or national level) to which this levy would be paid, was rejected. Each of the countries then started to proceed independently.

With effect from 2011, the bank levy was introduced in the UK, France and Germany. The levy applies only to banking institutions, and there are also significant differences in both the definition of taxpayers among these countries, and the inclusion of subsidiaries operating abroad. The same applies to the determination of the tax base. In Germany, the levy is paid into a special fund, while in the UK and France it is a standard state budget income. In Great Britain, the yield from bank levy in 2015-16 fiscal year (£ 3.4bn) was higher than corporate income tax revenue in the banking sector (£ 3.2bn). The yield from corporate tax of banks before the crisis, in the 2007-08 fiscal year, amounted to £ 6.4bn! Even more has flowed and flows in public budgets from the British banking sector in the form of taxation of wages PAYE (income tax and national insurance contributions): £ 16.7bn before the crisis and £ 17.8bn in

2015-16 (Tyler, 2017). In response to the recession, there has been a gradual reduction in UK corporation tax from 28% in 2010 to 19% in 2017; from 2020, 17% rate should be applicable. The bank levy rate (0.05%) was originally from assets of bank and building societies (2011) gradually increased to 0.21% in 2015 and then declined: from 2017 to 0.17%; in the coming years it will continue to fall to 0.10% from 2021. The bank levy cannot increase the losses; it is non-tax deductible for corporation tax purposes.

Since 2016, a corporation tax surcharge of 8% has been introduced in the UK, essentially from the corporation tax base. It applies to all banks with annual profits over £25 million. It is estimated that over 200 banks, building societies, and new 'challenger' banks will be eligible for the new surcharge. This means some restructuring of the special taxation of banks. „By introducing the new surcharge on the profits of all banks the Chancellor shifted the emphasis underpinning his bank tax regime from being a corrective mechanism to tilt banks away from risky lending towards revenue raising. In light of this changing objective the Treasury needs to clarify what the purpose of bank taxes are, this particularly applies to the bank levy. Small and medium size challenger banks and building societies may feel that it is unfair to be asked to pay additional taxes to make reparations for the global financial crisis of 2008; a crisis that arguably they did little to contribute to, compared to the role of the biggest global banks“ (Barber and Hunt, 2016).

The German bank levy is proportionate to bank size, larger banks pay a higher rate. The levy was designed to reflect the perceived costs that an institution posed to society from systemic risk. The levy is structured in two parts and charged at the following rates:

- Balance sheet liabilities, excluding retail deposits, equity capital and a few other exclusions are charged at: up to €10 billion: 0.02 per cent; €10 - €100 billion: 0.03 per cent; €100 - €200 billion: 0.04 per cent; €200 - €300 billion: 0.05 per cent; €300+ billion: 0.06 per cent
- Nominal face value of derivatives: 0.0003 per cent

A bank will be exempted from paying if its relevant balance sheet liabilities are less than €300m. As a result, only around 25% of banks are captured by the levy. The annual payment is capped at a maximum of 20% of the bank's annual profits. The revenue raised by the German bank levy has been small in comparison to the UK (Dowell-Jones and Buckley, 2015). German bank levy is collected by the Federal Institute for Financial Market Stabilisation (Bundesanstalt für Finanzmarktstabilisierung) and transfers it to its restructuring fund (Restrukturierungsfonds).

The concept and design of the German bank levy was basically taken over into the Single Resolution Mechanism (SRM), being the second pillar of the Banking Union, created by countries of the Euro Area, Lithuania and Latvia. The first pillar of the Banking Union is the Single Supervisory Mechanism (SSM). The SRM's purpose is to solve the problems of banks in default flawlessly and with minimal cost for taxpayers and real economy. The Single Resolution Fund (SRF) is an instrument for addressing problems of banks. Contributions by banks raised at national level are transferred to the SRF, which will initially consist of compartments corresponding to each contracting party. These will be gradually merged over the eight-year transitional phase (mutualisation).

Since February 2016, a sectorial tax has been introduced in Poland for banks, insurance companies and other financial institutions, with an annual rate of 0.44% from the assets. In Slovakia, since 2012, there has been a "special levy on selected financial institutions". Until 2014, the Slovak banking sector paid 0.4% rate, 0.2% from 2015 and a zero rate should apply

from 2021. In addition, banks in Slovakia also pay a contribution to the National Resolution Fund, which is based on European rules and it is approximately four times lower than the bank levy (SITA, 2016).

For 2010, Hungary introduced a bank levy of 0.45% from assets in 2009. Similarly, other financial service providers were affected. The rate of bank levy was the highest in the world. The special tax on financial institutions was innovated for 2011; the highest rate for banks with assets over HUF 50 billion was 0.53%; the system of progressive rates also applied to insurance companies - with the highest rate being 6.4% from premiums above HUF 8 billion. Since 2010, Hungary has introduced a "crisis tax" for a period of three years, which applies to large companies with high profitability in the retail, telecommunication and energy sectors. These sectorial taxes were conceived as crisis, temporary taxes. However, they have survived to this day, even though they have been criticized by the EU and other international institutions. Despite later improvements, sector-specific taxes still play a prominent role, weighing on the business environment. From 2016 the 'sectorial tax for financial institutions' levied on credit institutions is 0.15% on the part of the tax base below HUF 50 billion and is decreased to 0.24% on the part in excess. "Apart from an additional marginal decrease in taxes on the banking sector, no further reductions in sector-specific taxes are implemented in 2017. These surcharges are usually based on turnover or assets and in some cases, involve progressive rates. As a consequence, intermediate goods and services are also part of the tax base, which results in a distortionary effect. Given that many of the sectorial levies could not be fully passed on to customers, they also decrease the rate of return to investment" (Hungary, 2017).

The Czech Social-Democratic Party (ČSSD) has long sought to introduce sectorial taxes, and has now submitted a proposal to introduce a "fair bank tax". The bank tax should have four rates, differentiated by asset value: 0.05% of assets up to CZK 50 billion; 0.1% for assets from CZK 50 to 100 billion, 0.2% for assets from CZK 100 to 300 billion CZK and 0.3% over CZK 300 billion. The reason for introducing the bank tax is purely fiscal, it shall help "to control the outflow of money from financial institutions abroad" (ČSSD, 2017). At the same time, ČSSD proposes to introduce "fair business taxes": "The Czech Republic has a very low corporate income tax rate of 19%. Moreover, it only has a single rate. We want to introduce a modern, progressive taxation of firms that will relieve small and medium-sized businesses ... On the other hand, larger corporations, which now post high profits and often avoid taxation, will pay higher taxes" (ČSSD, 2017). It proposes to introduce 3 tax rates: 14% for profits up to CZK 5 million per year, 19% for profits of CZK 5-100 million and 24% for over CZK 100 million. This proposal also concerns the financial sector. The proposals do not address the concurrence of taxation of the banking sector.

The taxes that are conceived purely fiscally for selected sectors should not be regarded bank levies as they are understood in the world. The purpose of bank levies is not to increase state budget revenue, let alone control the outflow of money from financial institutions abroad. It may be considered legitimate and systemic to introduce an increased corporate tax rate for highly profitable businesses, for example, according to the British model. In addition, the introduction of a SRM mechanism at both national and common "European" level can naturally be considered.

### **Conclusion**

The issue of taxation of the financial sector is a very complex one, with an extraordinary ability of the sector to pay (except for financial crises), the overwhelmingly deficient burden of most financial services by the value-added tax, efforts to use taxes as a means of regulating the

financial sector, and suppressing speculative trades being in play. In addition, there has been a major globalization of the financial sector that has not only increased international tax competition, but has opened the door for tax evasion slightly - all of that in the conditions of intensive lobbying and, eventually, corruption.

The approach to the taxation of the financial sector should generally be based on the much-needed reform of value-added tax, as the necessary alternative solution of this problem can hardly take into account the uneven tax burden arising from the first generation of value-added tax. The modernization of value-added tax is very difficult under the conditions of the EU, although theoretically, it could be relatively simple.

In the mid-term, we cannot but accept the given concept of the value-added tax in the EU. It follows that we need to introduce an alternative taxation of financial services in Czechia - unlike most EU countries, we do not have any alternative solutions yet.

The financial transaction tax is not and probably will not be a solution to the problems of speculative financial products. If it is introduced in the EU and if it works, we can implement it in our country as well. A more realistic approach may be to join the Single Resolution Mechanism, complemented by the introduction of bank levy according to the German model. There is no reason for the existence of other, similarly designed bank tax.

On the other hand, the proposal of the ČSSD to differentiate corporate income tax rates could be based on the British concept of a corporation tax surcharge designated for banks and building societies. Even a substantially higher rate of corporate income tax, designed as an alternative to the value-added tax can be introduced in the Czech financial sector. The corporate income tax rate in the Czech Republic is lower than the EU average (22%); however, in relation to the financial sector, we do not have to seek (moderately) below-average taxation, which is internationally typical for smaller states. The corporate tax rate for the Czech financial sector could be approx. by 10 percentage points higher than the current rate (19%). This solution may also include a separate tax from wages in the financial sector, according to the Danish model.

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