

CENTRAL EUROPEAN REVIEW OF ECONOMICS & FINANCE

2019
Vol. 31, No. 3

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ISSN 2082-8500
e-ISSN 2083-4314

Publishing House:

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ul. 26 Czerwca 68, 26-600 Radom
tel. 48 369 80 74, fax 48 369 80 75
e-mail: wydawnictwo@inw-spatium.pl
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Drukarnia Bookpress.eu
ul. Lubelska 37c, 10-408 Olsztyn

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Central European Review of Economics & Finance

Vol. 31, No. 3 (2019), pp. 5–16

DOI: 10.24136/ceref.2019.008

Received: 5 April 2019. Accepted: 12 June 2019.

Kyrmizoglou PANTELIS¹, Daoultzoglou AIKATERINI²

EVOLUTION OF PAYMENT METHODS IN GREECE – DETERMINANTS OF THEIR USE

From society's point of view and the exchange of products, metal and gold, till the digital era of cryptocurrencies mediated a lot of phases in payment methods that Greeks used. In this assignment, means of payment are presented and analyzed through the years, differentiations and trends are examined as well as Greek citizens', and not only, choices are commented according to the means of payment they use via statistical reports conducted by related entities. The aim of this primary research that has been developed in Delta Municipality is the specifying of factors which have an impact on users' payment choices and also the discovery of a relation probably between those choices and those of sex, age, level of income or level of education. Findings show the general dominations of debit cards in all ages and level of income, for each kind of transaction (natural or digital), confirming the raise of plastic money in Greece after capital controls' arrival. Speed, directness and convenience are the characteristics which are necessary to be fulfilled by a means of payment, but also another modern reason and necessity of plastic money is the new tax-free builder regime. Furthermore, loyalty programs that cards provide most of the time are really tempting. There is no familiarization neither with cryptocurrencies nor the new contactless media, but only for the concept, independently of age. Finally, grey payments are still a concerning issue, which are preferred by everyone verifying the Greek reality.

Keywords: payment means, transaction, development, payment method choice, influence factors, transactions' speed.

JEL Classification Codes: E42.

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Introduction

According to annotated bibliography, money should not be confused either with income or with wealth. It is a static concept, a definite amount at a definite time moment. „Money is anything that is accepted for products' and services' payment or debt pay-off" (Noulas, 2015). Means of payment have changed radically through the years and nowadays we also have plastic, electronic and digital money too. In total, there are eight payment generations in Greek history. In this paper we will discuss each generation's features, advantages and disadvantages as well as trends which foreshadow future updates in the payment field. Moreover, cryptocurrencies are probably money's future (Papadopoulos, 2018) and their consequences are a recent emerging issue. We enumerate dangers and reservations that arise from the dominance of Bitcoin. The aim of this paper is to seek which criteria affect consumers' payment choices and to which scale. Via the research conducted we will analyze consumers' preferences in physical, electronical and mobile payments dependent upon their age, sex, level of education and income. We examine if there is a relation between the respondents' preferences and the above factors and whether the results agree with global payment statistics. Finally, we will arrive at conclusions and future research recommendations.

1. Literature Review

To begin with, it is of major importance to refer to money's attributes which are (Begg, Fischer, & Dornbusch, 2003): acceptability, durability, homogeneity, divisibility, portability. This means respectively that it needs to be accepted by all members of a society, to withstand the wear and tear of being passed through, to be interchangeable (each monetary unit is the same as every other unit), to be able to be divided into small units and to be easy to carry. According to Grolier encyclopedia (Jackson, 1991), money cannot be defined as a specific object but it is defined from the functions that it serves. The four functions are the following (Stiglitz & Walsh, 2009):

- A medium of exchange
- A measure of value
- Store of Value
- Standard of Deferred Payment

The first two are the primary functions of money, and the last two are called secondary functions of money. These functions must be satisfied from an entity to be considered as money (Heffernan, 2005).

1.1. The eight payment methods' generations

Money as a traditional payment method did not always have its current form (Tsarou, 2007). Throughout the years people used different means to represent the role of money. The first means of payment were things with intrinsic value (Cecchetti & Schoenholtz, 2015), for example animals or Chinese silk, Norwegian butter, Venice salt, Fiji whale teeth. All these things had innate value even if they had never been used as actual money. This condition where „I give a commodity and I get a commodity” constitutes the first and most primitive means of payment generation, the trading action in a barter society (Zahariadis-Souras, 2002). However it is inflexible and difficult as a means of payment (Stergiotis, 1991) because it should fulfill the function as a measure of value and store of value, which is impossible in case of an animal as it cannot be divided into submultiples or it will die.

As a matter of fact, at the second generation precious objects like gold are being used. Gold is widely acceptable, quite durable and can be cut into pieces without any loss of value. Metal reserves had a very high value which was difficult to be lost or damaged as well. As a result metal coins, like the bronze „ovolos”, form the third payment generation. The above three generations can be stated that consist inclusive money: animals, oil, oysters, gold, metals were being used as money having their own intrinsic value equal to their monetary value (Zahariadis-Souras, 2002).

Due to the fact that those precious metals could be stolen or lost, people resorted to vaults to keep them safe. So goldsmiths, like primitive bankers (Zahariadis-Souras, 2002), issued paper certifications when possessors needed a certain amount to perform a payment in order to transfer only the paper to seller without withdrawing the valuable metal. This is the preface of today's bank notes and consequently paper money is the next fourth generation. This generation has double monetary character as it is both a monetary entity, which implements payment units into monetary value units, and a monetary instrument while it allows transfer of payment units from one property to another (Menais & Mathias, 2001). Moreover, money does not have intrinsic value anymore and it is called fiat money from now on (Noulas, 2015) as it just represents value.

Afterwards, checks, bills of exchange and payment orders in general compound scriptural money, which constitutes the fifth payment generation. Scriptural money is expressed as a demand of the payee against a bank in which the foresaid payee owns a bank account (Kahrimanis, 2001). It is a simplified banking entity but is not a monetary instrument as it cannot deliver tangible possession (Tsarou, 2007).

Sixth payment generation is characterized by plastic money. Plastic money acts as a substitute of cash and contains credit card, debit card, prepaid card etc. Credit cards first appeared in Greece in the 1980's and contributed to the raise of economic activity (Sinanioti-Maroudi & Farsarotas, 2005). Historically, the first credit card ever was the 1949 Diners Club (Hristopoulos & Ntokas, 2012).

Electronic money signifies the seventh payment generation and electronic payments in general. Electronic money and e-shops have provoked great changes globally and are developing and transfiguring day by day. E-payments are concerned in any payment to a company, bank or public institute through an electronic network using contemporary technology (Somaraki & Hanssens, 2003). They are really popular due to the fact that they are fast and geographically limitless (Muller, 2007). Clearing used to be a process of an informal partnership where an electronic mediator is located between two counter-parties for an electronic transaction, seller and buyer, and matches all the purchase and sale orders with their involved parties without any physical contact (Domanski, Gambacorta, & Picillo, 2015). Nowadays this mediator does not exist because e-banking has simplified all the procedures (Zavitsanaki, 2016).

Finally, cards that have microchip and stores information about their holders are named smart cards. They require special POS (Point Of Sale) to interact with it in an intangible or contactless way. Significantly, the first Greek smart card was the calling card supported by OTE – communication provider - (Stathopoulos, 1995). This is the eighth generation. According to Profis (Profis, 2014) next cards will just be microchips and tags integrated in smartphones that will demonstrate the role of a contactless card using NFC (Near Field Communication) technology.

1.2. Cryptocurrencies: the ninth generation?

Despite the fact that contemporary economy is characterized by inequalities and poverty, rapid technological evolution is noticed (Leventidis, 2018). It is definitely hard to predict how many payment generations are going to rise in the future. Petty questions for money are posed, but not of petty importance (Eriotis, 2018).

Bitcoin is a form of electronic cash and was created in 2009 as decentralized digital currency on a peer-to-peer network. It was released as open-source software and its creator is a person or a group of people under the nickname Satoshi Nakamoto (Davis, 2011). User owns a bitcoin wallet that is installed in their computer or cellphone and has the ability to buy, to use, to accept bitcoin, using bitcoins (Hong, 2018). Bitcoin network shares a big ledger called blockchain that records every transaction.

It provides easy, low cost and tax-free transactions which are encrypted and anonymous (Casu, Girandone, & Molyneux, 2018). However, they are not widely accepted because there is neither central management dependence nor Central Bank's supervision (Papadamou, 2018). Being liberal is good but global economy should always be taken under consideration (Kottaridi, 2018). Furthermore, they are being used for illegal things like criminal activities, money laundering, terrorism funding. These are the reasons why Bitcoin's price flows occasionally, rising and falling. For example, negative impact is provoked when bitcoin users try to avoid taxation, but the opposite happens when Facebook projected Bitcoin ads (Chang, 2018) and also when Microsoft and Dell

accepted Bitcoin as a payment method (Davila, 2018). There are around 700 cryptocurrencies that are tend to hedge Bitcoin's disadvantages and decrease liquidity risk (Pajpai, 2017) like Litecoin, Ethereum, Zcash, Dash, Monero, Ripple.

In Greek reality there is a questioning whether cryptocurrencies are as new as we think. Ancient Greece's monetary policy has a lot in common with cryptocurrencies' concept (Bitros, 2018). Specifically, Glafkes was a silver currency in Athens, where Athens' mint was supplied silver from an area called Lavrio. There was no Central Bank but the system was efficiently functioning without inflation, and metal's density stayed stable for two centuries. At the end of Peloponnesian war undervalued coins appeared with less silver content and they had to take gold from Zeus' statue in order to mint coins. Then, «Nikofon law» was created which foresaw parallel "good" and "bad" coins circulation, with random silver content sampling from slaves. At the same time, private currencies were in circulation, for small value market and simultaneously big federations circulated local currencies. Can all these incidents be parallelized with nowadays' cryptocurrencies (Kyriazis, 2018)?

However, the defacto monopoly of Central Bank, which is to release banknotes and coins, is put in doubt by cryptocurrencies (Stournaras, 2018). This operation is reflected in Bank's balance sheet raising its liabilities. Greek Central Bank is an Anonymous Company (S.A.) and has the ability to buy assets in order to make profit, the so called seigniorage income (Sigurjohnsson, 2018). Central Bank's target is to ensure prices' stability and its individual, institutional and operational independence (Gortsos, 2018). With the dominance of cryptocurrencies, immediate forthcoming changes will arise, like the inadequacy of inflation control and the results will affect commercial banks (Stournaras, 2018). It is still too early for traditional currencies to be replaced and a solution has to be found. Central Bank Digital Currencies (CBDC) or digital currencies released by Central Banks are the quintessence of the new digital era 2.0. (Wong, 2018). The new digital currency will be integrated progressively so as money's composition to be changed (Bjeng, 2018). "E-Drachma" could be potentially a New Greek cryptocurrency, adjustable in Greek reality so as unemployment, low GDP and overtaxation can be fought (Kortsch, 2018).

1.3. Statistical payment reports

After capital controls' enforcement in summer of 2015, Greece faced a difficult economic fluctuation and politic crisis, the known as «Phase II» (Hardouvelis, 2018). The positive outcome of this harsh situation is that usage of plastic money was impressively raised throughout these four consecutive years. Cards are used in transactions 40% more in the first quarter of 2018 than the equivalent of 2017 (Hellenic Bank Association, 2017). This raise is benefiting from the fact that POS were mandatorily placed in retail, that electronic payments are inextricably interwoven with tax-free building, that

the incentives that are given through lottery are really tempting to citizens (Tsipras, 2018). Greeks are using plastic money more and more for under 20€ payments but on the other hand checks are being used less and less in general (Bank of Greece, 2018). Additionally, it is proven that through cards, high revenues from VAT have brought important motility to the market. (Hondroyiannis & Papaoikonomou, 2017).

Useful statistics prove that Greek University students are in favor to cash on delivery for their online purchases despite the extra charges, and prepaid card, PayPal and PaySafe cards are following options for them (Antoniadis, Saprikis, & Poltitis, 2014). Research that conducted taking under consideration the income factor shows that electronic money is preferred to debit cards only for online transactions and by high earners, while low earners choose debit cards for both online and offline transactions (See-To, Papagiannidis, & Westland, 2014).

Quite an incident are also grey or «under the table» payments, especially in health industry (Cohen, 2011). 36% of patients in a public hospital has admitted that they have at least once made an illegal payment, and 74,4 % of women have been involved in informal payments for obstetric services (Kaitelidou, et al., 2012). Unofficial payments are an obstacle in economic indicators in which high leaving costs and low purchasing power are not deflected (Souliotis, et al., 2015). It brings both economic and ethical damage to Greece.

Findings from annual reports show that non-cash transactions are also popular around the world, as there was a 11,2 % raise compared to 2016 with emerging Asia, central Europe, middle East and Africa to be the leads (Capgemini, 2018). It is predicted that developing countries will climb up to 19,6 % till 2020 in plastic money transactions and Electronic and Mobile payments are estimated to cover 32 % of total non-cash transactions globally (Bezhovski, 2016). What is more, debit cards are gaining ground over credit cards as the firsts take over 70,5% of total card transactions. According to Basel III, ratio debit/credit card has shifted from 59:41 to 90:10 in last decade.

2. Research Methodology

In this research methodological triangulation is implementing as qualitative and quantitative research is combined (Samanta & Halikias, 2016). The research question is very important to be set from the beginning (Creswall, 2016) and in our case the target is to find the existence of correlation between means of payment choices and factors like age, sex and income. Data was collected by means of a five-section questionnaire administered from June 2018 until August 2018 to residents of Delta Municipality in Thessaloniki, Greece. According to municipality's listing total population amounts to 45.839 residents. The best sample size is calculated and amounts to 381 (Lelakis, 1983) with 5% sampling error and 95% statistical significance. 450 citizens responded out of 600

who questioned and 381 of those answers were chosen to represent the sample according to the proper age stratification. Data analysis was accomplished with Microsoft Excel and SPSS platforms and research is primary descriptive. Prior to its distribution, the questionnaire was pretested in order to find problems about the clarity of questions, and no further changes needed to be done.

3. Results & Findings

Obtained results are going to be presented in categories like those of the questionnaire. Besides first category in which demographic questions are commented, at the rest four different types of payment like physical, electronic, mobile and informal transactions are described. In respect to demographic data, 45,1% are nonpublic employees, 18% are public service employees and 7% are unemployed. 46% are highly education graduates and impressively 26% of respondents are Master graduates (72% in total). Sex and age are uniformly distributed based on sample's population.

3.1 Physical store transactions

A total 310 out of 381 respondents are debit card owners, whereas only 100 are credit card owners. Debit cards are quite popular in every age and are being used for every day transactions by 45% of sample. If we perform age grading we will discover that older respondents are credit card and cheque book holders as they are high earners and entrepreneurs. At the other extreme, younger are more favor to prepaid cards as there is a specific spend limit and total expenditures can be controlled.

Findings also suggest that debit cards are being chosen as a means of payment in every one of the following shopping categories: supermarket, gas, vacation, devices, clothing except from one, cafés and restaurants. For small value transactions cash is still the king. In general, cash is the second choice as a payment method and the combination of cash and debit card is the third, showing the dominance of debit cards. Noteworthy is the fact that E-banking is being chosen for bill payments because there is less commission charged.

Factors affecting consumers' choices were also examined and this question was really critical. Transaction's speed, ease and instancy play the most significant role, independent of age. Results show that under 25 year old consumers ignore hazards from contactless transactions and are not interested in tax-free building. The 35-46 age scale however, desires to pick a payment method that offers bonus points and a future discount through loyalty programs – very popular in plastic money. The same age group is being influenced by the ability to bargain, which is accomplished only with cash. Therefore, younger are more careless and elder that possibly start or have a family are pursuing cost savings.

3.2 Electronic transactions

Regarding e-transactions, 53% has never made one while the rest 47% is mostly composed by people aged between 25 and 34. As we can see the boxplot in Figure 1, women prefer debit card and cash-on-delivery as electronic payment method, whilst men present a variety of options like credit card, debit card, PayPal, E-banking, bank deposit and cryptocurrencies.

In this context, 63% of respondents are familiar with cryptocurrencies concept, when the rest 37% is constituted by both men and women of all age and education groups. Bitcoin is the most famous cryptocurrency as 99% has at least heard of it once. Only 4% of total sample is using cryptocurrencies as a means of payment or as an investment instrument. Young men supported that cryptocurrencies offer anonymity, high profits, speediness, great potentials and that they establish a new market with glorious future, independently of their education.

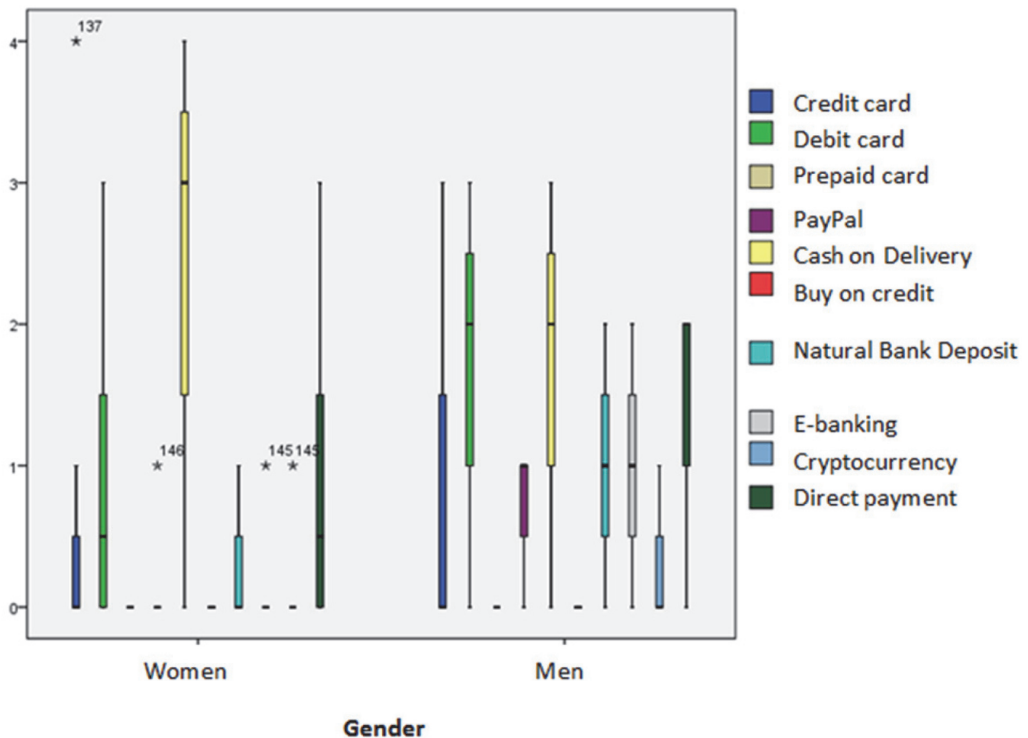


Figure 1. E-payments

3.3 Mobile transactions

Smartphone holders touch 93% of sample and 47% of those supports that is familiar with NFC (Near Field Communication) technology that allows smartphones implement contactless transactions. Sure, as the age rises, so more negative answers are collected. However, 66% would not use their smartphones as a contactless debit card due to the lack of safety and trustiness. Again, the younger are more open to this option against the elder. Finally, about three out of four (72%) have heard of new state-of-the-art payment instruments like smartwatches and wearable paybands. This knowledge is not connected with education level, as most negative answers were given by PhD holders.

3.4 Underground economy transactions

Respondents unanimously agree that they would not always prefer to pay without a receipt by escaping VAT for economic profit. For that matter, they pay legally because they are law-abiding and in order to achieve tax-free building. On the contrary, 97% has paid at least once without taking a receipt, making a «grey» payment, independent of their income. Those «under the table» payments mostly include private tutors, car repair, taxi, plumbing and health services.

Conclusions & Future Research

All in all, theory summarizes that as payment generations are evolving, the more digitalized they are turning into. Having started from a barter economy, nowadays we are talking about cryptocurrencies and new form of currencies in general. It is still too soon for a completely new economy to be established. It needs time for cryptocurrencies to be catholic recognized, especially in Greece where there is no support from Central Bank and the dangers are more than the benefits.

The previous statistics that were commented in second part are totally confirmed by the research. More and more consumers are debit card holders who use them in every day purchases. Credit cards are no longer so popular due to banks' safety valves and the reproach of people to borrow money. Cash is the second choice as a means of payment and prevail mainly in small value transactions. A quick, easy and direct payment is what all consumers want. Especially, people aged from 35 to 45 aim to save money from loyalty programs and discounts, when younger ignore those factors.

Results also show that younger people are keen on electronic transactions and purchases from e-shops. Young women are favor to safe payment methods while young men tend to try more innovative ways like cryptocurrencies. Consumers' age plays again a catalytic role in technological update willingness and information but not consumers'

education. Higher education level does not translate to higher computer literacy. Grey payments still exist in the name of extra profit.

In the future, same research could be conducted every five years to ascertain the changes and the evolution of citizens' choices. Another recommendation would be to categorize occupations. Further job analysis would bring more details for users' profile and tastes because in employee category different professions are enclosed, for example people working in science or in humanities are both employees.

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Central European Review of Economics & Finance

Vol. 31, No. 3 (2019), pp. 17–33

DOI: 10.24136/ceref.2019.009

Received: 24 January 2019. Accepted: 12 June 2019.

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MIGRATION AND NATIONAL SECURITY OF THE VISEGRAD COUNTRIES. DOES THE NATION STATE HAVE A SUPERSTATE?

Several serious circumstances led to the writing of this essay: since 2008 the crisis remains, albeit with varying degrees of intensity, the situation in the field of international security, as well as debt and institutional crises, are worsening not only in the eurozone. Probably the organized migratory wave of war, economic and climate migrants continues to move across the permeable borders of the Schengen area, showing how the European Union is fragile and helpless. [Klaus, Weigl, 2015] German Chancellor Angela Merkel said there is no upper limit for the number of people who would be admitted to escape political persecution in their country. Germany leaves the Dublin system inconsistently, runs counter to European cohesion and stops differentiating between the immigrant and the refugee. Migration divides EU Member States into patriarchal and patrimonial and distrust between municipalities. Between „old” and „new” EU countries, scissors are opened. In addition, in some regions of Europe (France, Belgium, Germany, Sweden, the United Kingdom) there are closed communities where the majority law is not valid. Our current socio-political and economic existence is based on a traditional understanding of security. However, the second decade of the 21st century represents a political and military conservative mirror that reflects the image of prosperity and security from a different angle than in previous years. Dramatic developments have led to massive migration of the peoples of the African and Asian continent and to the division of the European Union, especially with regard to the permanent mechanism of redistribution of asylum seekers. Our aim is to contribute to discussion and reflection on topical issues of security environment and security system as a follow-up to the dramatic development that have resulted in the massive migration of people from the African and Asian continent, and in the European Union's break-up, especially in view of the permanent mechanism of redistribution of asylum seekers. We are focused on to what extent the security system of the EU and national states has been threatened and what the threatening factors are. Our aim is to point out that the international security situation has not changed for the better in the second

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decade of the 21st century. For this purpose, the author uses deductive, analytical, comparative, scientific methods such as exploration, prediction, explanation, and Hanlon's razor.

Keywords: Climate, Economic and War migrants, European cohesion, Dublin system.

JEL Classification Codes: F22.

*The most valuable contribution,
we can make to the integrating Europe,
is our dearly paid historical experience.*

Václav Klaus

Introduction

Several serious circumstances have given me the impulse to write this article: there has been a crisis since 2008, albeit with varying intensity. The international security situation has been deteriorating, as well as debt and institutional crisis, not only of the Euro zone. Our current socio political and economic existence is based on the traditionalist understanding of security. However, the second decade of the 21st century sets to the political and military conservatives a mirror that reflects the image of prosperity and security from a different angle than it was in previous years. Prosperity and security are endangered by, until recently, „overlooked threats” such as terrorism, separatism and radical Islamism, be it of global or regional origin.

The European Community drunken by its success has spread out. The way to a historic triumph has opened but, unfortunately, it also unlocked the door to a crisis of this community. It is already obvious that the broadening of the EU (2004) goes beyond the EU's „helmets” and the European bureaucratic mechanism. In the context of the refugees tsunami pouring into Europe Eden today it seems that EU nations live rather together than united.

This paper provides arguments that today's economic, social and security threats and hazards of the whole world and Europe have had deep-rooted causes, based on the often ill-considered political decisions of (non)authorities, on their intransigence and unwillingness to seek a compromise.

My aim is to show that identical interests do not automatically mean the existence of a common European Union security and defence policy. The mere vision of the EU as a superpower and strengthening illusions about its power as well as a continuous attempts to either open or hidden export of democracy on bayonets do not guarantee the security of the world and Europe. The author is trying to report about the ongoing

transformation of the security risks for the European super state (of which we are a part), which is under way after the collapse of the bipolar world, where security as a subjective status depends on the social environment, on the perception of threats and their interpretation. At present, the security is not only about the threats of a nuclear or chemical bomb or other weapons intended for disposal of their own species.

In a more and more shrinking, though a globalized and rivalry world, even a foolish speech of a politician can be dangerous. There is a number of examples of such verdicts threatening the security locally, regionally and globally from the beginning of the new millennium. Politicians, intellectuals and the general public perceive that despite an elimination of the real threat of war between East and West, the world – unfortunately – has not become safer.

1. Migration exists from negotiation

It is the movement of a minority in which there is a change of residence within or across the boundaries of any administrative unit in the most common use within a state or states where similar or identical economic conditions or similar or the same political or religious laws apply. Migration can have or has significant economic, cultural and population implications, it is one of the most important regional processes. From the demographic point of view, migration can be expressed by several indicators. One of these is the migration balance (sometimes also „net migration”), which reflects the difference between the number of immigrants (immigrants) and emigrants in the area. Depending on the outcome, we are talking about either migration growth / gain or migration / loss. It is calculated as follows:

$$M=I-E$$

where:

M – Migration Balanc,

I – Number of immigrants,

E = Number of emigrants.

Migration (arrow number 1) in conflict areas, unfortunately, is a common phenomenon in the 21st century. Conflicts of conflict (Afghanistan, Iraq, Syria, Central African States of island states and nations) and social (including political) or economic differences in migration are a serious socio-economic problem. Migration may be voluntary (for work or for relatives) or forced (the cause of which is usually a severe deterioration in living conditions, war status (Kurds, Jezídfové, Ukrainians from eastern Ukraine, dictatorships, etc.) The world's most emigrants currently come from Afghanistan (4,500,000) and Palestine (4,123,000), and the number of people living in a country other than their birth is estimated at 150,000,000 to 185,000,000. In most countries, it is very difficult to

obtain asylum (Switzerland) because their asylum policy is based on a very thorough examination of the reasons for emigration and the success rate of asylum applications is in percentage units, mainly for political reasons. people in special facilities, with the level of services provided here in many developed nations, including the US, very much. With regard to the declining population of most developed nations, the question arises whether controlled migration of particularly educated populations is not a solution to the imminent aging of the population. There are, however, cultural and religious differences and, in many cases, also the xenophobic mood of the domestic population, fearing job losses and rising crime rates.

Emigration is an expression from the perspective of the source of the movement (where it comes from), it is the eviction of the population. Emigration (out of the widespread migration, eviction) is leaving the country of origin and moving to another country, as shown in the diagram (Figure 1) on the arrow as number 2. We talk about emigration when there is an element of will in the game – when people have a choice. As for an act where people can not choose, or they have to change, for example, religion, we are talking about expulsions and exulsts, and in some contexts we are more likely to use the term exiles [Morberg, 1976]. The causes of emigration can again be economic, political or religious, or a combination of several.

Re-emigration is the movement of the population, which involves emigration and re-immigration.

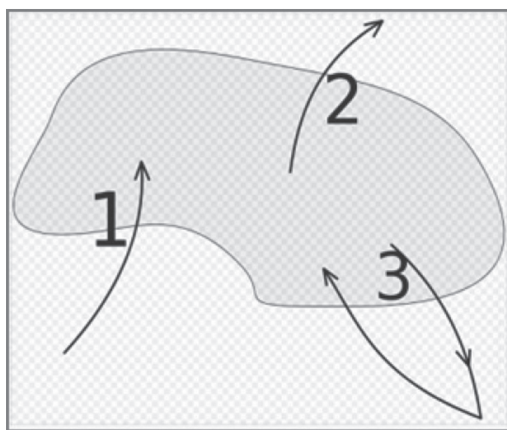


Figure 1. Migration, emigration and re-emigration

Source: own study.

Migration is a global phenomenon caused not only by economic factors but also by social, political, cultural, environmental, health, education and transport factors. The reasons for migration are interregional and intra-regional differences, a lack of job opportunities that lead to a low level of living conditions between different socio-economic

groups. There are three components of population change: a) mortality, b) fertility, and c) migration and two types of migration: internal and international. Internal migration is the movement of people from one place to another place in a given country. International migration is the movement of people from one country to another in order to gain employment, to set up a family or to raise the standard of living. This is generally the case because people have less opportunity to improve the socio-economic situation in places of dislocation and are forced to migrate to more developed areas.

Different approaches by scientists allow you to study migration from different perspectives. Sociologists emphasize the social and cultural consequences of migration, while geographers emphasize the importance of migration in terms of time and distance, and economists emphasize the economic aspect of migration. Politologists are interested in how migration (emigration, immigration) influences the power behavior of the elites, whether their activities and well- security of the company are already managed.

2. Accessions of the V4 countries to the migration crisis and security

2.1. Czech Republic and migration crisis and security

Although the number of asylum seekers in the Czech Republic is growing steadily, their number is still relatively low. The reason is geographical location, relatively lower economic level compared to Western neighbors, small communities of foreign nationals from countries with the highest number of asylum seekers, and also the already mentioned restrictive immigration policy. Although the EU has approved redistribution quotas, which have become mandatory for the Czech Republic, only individual persons have actually been redistributed. The Czech president's negative comments on Muslim migrants cited in foreign media contribute to the fact that even in the coming years, the Czech Republic will not be a popular destination for Muslim immigrants. The Czech Republic's spending on migration in 2015 amounted to about one billion crowns, which is less than one thousand of the state budget for the year. The Czech Republic has contributed to the relevant European Union funds, assisting the Middle East, the Western Program (in support of Syrian inhabitants and refugees) as well as the UNHCR. The largest amounts from the state budget of the Czech Republic were allocated in the context of migration for the purposes of stabilizing the countries that are the source of migration and the place of the main transit of migrants. Humanitarian aid to countries hit by the refugee crisis and war conflicts is also significant.

2.2. Hungary and migration crisis and security

Hungarian leaders' views differ greatly from the Brussels mainstream, and also about issues surrounding the migration crisis. The Hungarian Government's approach to migrants is constantly criticized by most European states. Hungary, like the Czech

Republic, rejected the idea of mandatory quota for the redistribution of migrants, and in December 2015 Hungary even filed an action against these quotas at the European Court of Justice. Hungarian Prime Minister Viktor Orbán is one of the hardest opponents of the EU's immigration policy. Orbán in Hungary unofficially assumed the role of leader in V4 on issues of migration crisis. However, despite strong disagreements between the Hungarian government and Brussels, the Hungarian population still agrees with the idea of European cooperation, as evidenced by the 2014 research, when 48% of the voters voted the confidence of the EU. Like some other V4 leaders, Hungary has radically expressed itself about the current migration crisis. Hungary clearly refused mandatory redistribution of refugees through quotas. Already after the outbreak of the 2015 migration crisis, Hungary has decided to build a barrier to protect the Hungarian border in the south, thus limiting the transition from Hungary to Germany. The Hungarian government perceives refugees and migrants from the 2015–2016 wave as those who have gone to Europe without permission and are reluctant to cooperate with local authorities. Hungarian Prime Minister Viktor Orbán himself was the first European leader to hold a referendum on mandatory quotas on October 2, 2015; most voters voted against mandatory quotas. In 2016, Orbán proposed Lisbon as a solution to the current migration crisis in Europe. According to Orbán, Schengen has to go through the subsequent changes that will help to stop the collapse of the EU. In his speech in March 2016, Orbán pointed out that immigrants bring increased crime and terrorism to European countries. Mass immigration from different regions is a threat to the European way of life, culture, customs, and Christian traditions. He also stressed that the previous immigrants were not able to get too involved, living in their own communities with the view that the current migration crisis is planned and directed, and its purpose is to change the cultural nature of Europe and destroy the sovereign nation states. Hungary's attitude towards the migration crisis of 2015–16, along with the rejection of a state-funded redistribution mechanism or campaign against immigration, illustrates the decision to build a fence at the country's borders. The decision to build a fence took place only after other Member States did not respond to the request for assistance in resolving this crisis. It should be recalled that Hungary sought to address the situation in accordance with its duty to protect the EU's external borders. Since September 2015, Hungary has built 175 km of fence along the border with Serbia, then on the border with Croatia another 375 km fence. The construction of fencing at the border was followed by other European states. A number of countries have thus tightened border controls at the EU's internal borders.

2.3. Poland and migration crisis and security

Poland, the only Central European country, was not directly confronted with the effects of the migration crisis. As far as geographical location is concerned, it is furthest away from migration routes, where refugees and migrants come to Europe. On the other

hand, Poland actively participated in the search for a solution to the migration crisis. According to surveys from the PEW Research Center, Poland is the country with the largest share of EU support. Poland, however, abandoned the key vote in the V4 and supported the EC's proposal with quotas. Petr Kratochvíl sees it as a pragmatic decision by Poland, but it does not change the fact that Poland is essentially the same with other V4 countries in most of the attitudes towards migration. An important figure for Polish and European politics is Donald Tusk, who has been President of the European Council since 2014. As he is one of the most important positions in the EU, his attitude to European integration is proactive. The current security challenges that threaten the future of the EU and therefore Schengen, including migration, are perceived as grave and at the same time claim that only a single EU can solve the situation without jeopardizing the future of European integration. All the important measures that EU member states have to take must be implemented in a coordinated and cooperative manner. According to Tusk, it is essential for the country to financially support countries under pressure from the migration crisis. However, on the other hand, the EU will expect intensive assistance from the partners, thus avoiding any humanitarian disasters. The EU must prioritize a suitable migration policy that will help resolve the current crisis and not the other way round. For Tusk, the most important issue is how we have control over our borders. The future of Schengen is threatened, so European countries have to step up border controls. Witold Waszczykowski, Polish Foreign Minister, defined the migration crisis as a result of negligence. Europe has only concentrated on the crisis in the eurozone, Greece, Brexit, and has not followed the events in the Middle East after the outbreak of the Arab Spring that has seen a number of conflicts, including the situation in Libya, which has been affected by European intervention as well. Poland has expressed little willingness to accept refugees, with the fact that they themselves are heading to Germany or Sweden. The question of mandatory quotas later on, Poland, like the other V4 countries, was considered dead. Concerning security concerns at EU level, according to Waszczykowski, there is no real common foreign and security policy, so any measures in connection with the security risks of migration will be solved by Poland or NATO or bilateral cooperation with the US or individual regional neighbors.

2.4. Slovakia and migration crisis and security

Most Slovak political elites agree on the approach to current security risks and hence also rhetoric towards the EU and the future of Schengen. The opposition to government under the leadership of the Smer party represents, in addition to a part of the opposition, the Slovak president Andrej Kiska himself, who, unlike the domestic government, supported most of the EU's steps in the area of migration waves. Regarding mandatory quotas, Kiska argued at the end of 2015 that it was not a lucrative solution, but that it had to be accepted if decided by the relevant European institutions. He also added that

the migration crisis has been the biggest problem for Europe since the end of World War II. The prominent opposition politician and chairman of the political party, Freedom and Solidarity, Richard Sulik, opposed to President Andy Kiska, refused mandatory quotas and overall perceived the whole process of so-called compulsory distribution of refugees very negative. Slovakia has therefore generally rejected the quotas, but a small number of refugees have been accepted under voluntary redistribution.

3. Hubris syndrom and lucifer's effect

D. Owen is particularly interested in leaders who were not ill in the conventional sense, and whose cognitive faculties remained working, but who developed what he calls the "hubris syndrome". "Hubris is inextricably linked to the possession and exercise of power. If an individual is deprived of power, the syndrome usually wears off," Owen says. "In this sense, it is a disease associated with a person as well as with a particular position. Moreover, the circumstances in which this function (position) is performed, affect the likelihood that the leader will succumb to it" [Owen, 2011]. A hubris feature is the inability to change the direction of politics, as it would be necessary to admit one's mistake. Owen in this context, talks about the so-called hubristic career and hubris is understood as a certain loss of the abilities: *„Political leaders suffer from a loss of capacity and become excessively self-confident and contemptuous of advice that runs counter to what they believe in or even of any advice at all. They begin to behave as if they dared to oppose the prevailing conditions.“* [Owen, 2011]. Usually, though not always, they are punished for that deed by Nemesis. As the Pulitzer Prize winner Barbara W. Tauchman says, the art of ruling is to restrain their own ambitions and keep the head open. However, we don't seem to realize that power begets foolishness and brings an inability to think. Structurally induced stupidity is typical for behaviour of detached ruling classes and, unfortunately, is highly relevant and ubiquitous. The elite that loses connection with the majority of those they govern, want to control (and, in fact they do control) society without really knowing what it is going on in it. The society today is (frequently) formed on one hand of a small elite, and on the other hand of the majority of the population. Both groups differ sharply from each other in a lifestyle, thinking and interests. Only a few people realize that it can, ultimately, cause a destabilization of delicately balanced internal state security. It's better to avoid thoughts about the implications of the foolish behaviour of politicians and elite that have impact on external security. A politician – statesman, is responsible for the welfare of his nation and must act according to different rules than an intellectual sitting in the café. Such a politician becomes then a statesman. Unfortunately, various players on the Czech political playground are playing the games falsely, and their behaviour represents an immediate security threat for everybody. Apart from few exceptions, politicians are not doing what they are paid for. This *„high-ranking snakes in suits“* as aptly characterized by Robert

Hare and Paul Babiak, subject their entire holding to *Lucifer's effect* (give me a power and I will give you prosperity and security) are political psychopaths and parasitic predators. We can see a profound discrepancy between the performance of (not only Czech) political entrepreneur and the reward (income) that he/she will receive from voters.

3.1. Hubristic behaviour, security threat and national security of the Visegrad countries

A typical feature of hubristic behaviour is the inability to leave the troughs in time. Even the Book of books states that humility coheres with the conception of truth. Where there is a boundless pride and where there are no restrictions for such an individual, he or she then sets off inexorably on the path to the intoxication by power. It seems that nothing is impossible and threats are ephemeral: From the given examples it can be concluded that hubristic behaviour possessing a security threat is carried out according to a regularly recurring pattern (Fig. 2) [Rožňák, 2014].

Hubris syndrome affects people in power, the syndrome is something that appears, it is a manifestation of natural processes, a set she has a power similar to the power of God (he or she is blessed with „Providence” – is superior). Hubris syndrome was formulated as a pattern of behaviour in a person who has 3 or 4 symptoms of the following list:

1. Narcissistic attitude to see the world primarily as an arena in which he or she can exercise power and seek glory, and not as a place with problems that require pragmatic and not self-centred approach.
2. Venturing into the events, which will probably throw him or her in a bad light, i.e. which does not improve his or her image.
3. Shows disproportionate concern for own image and presentation.
4. Exhibits messianic zeal and exaltation in speech.
5. Conflates self with nation or state into such a measure that prospects and interests of both entities considers to be identical.
6. Uses the third person or royal 'we' when speaking about oneself.
7. Shows excessive self-confidence, accompanied by contempt for advice or criticism of others.
8. Immense self-confidence, escalating to a feeling of own omnipotence, as far as what can be personally achieved.
9. Shows accountability not to a „secular“ instance of justice and colleagues but only to a higher court (history or God).
10. Displays unshakeable belief that he or she will be vindicated in that court.
11. Resorts to restlessness, recklessness and impulsive actions.
12. Loses contact with reality, gradual solitude.
13. Allows moral rectitude to obviate consideration of practicality, cost or outcome and displays incompetence with disregard for nuts and bolts of policy making.

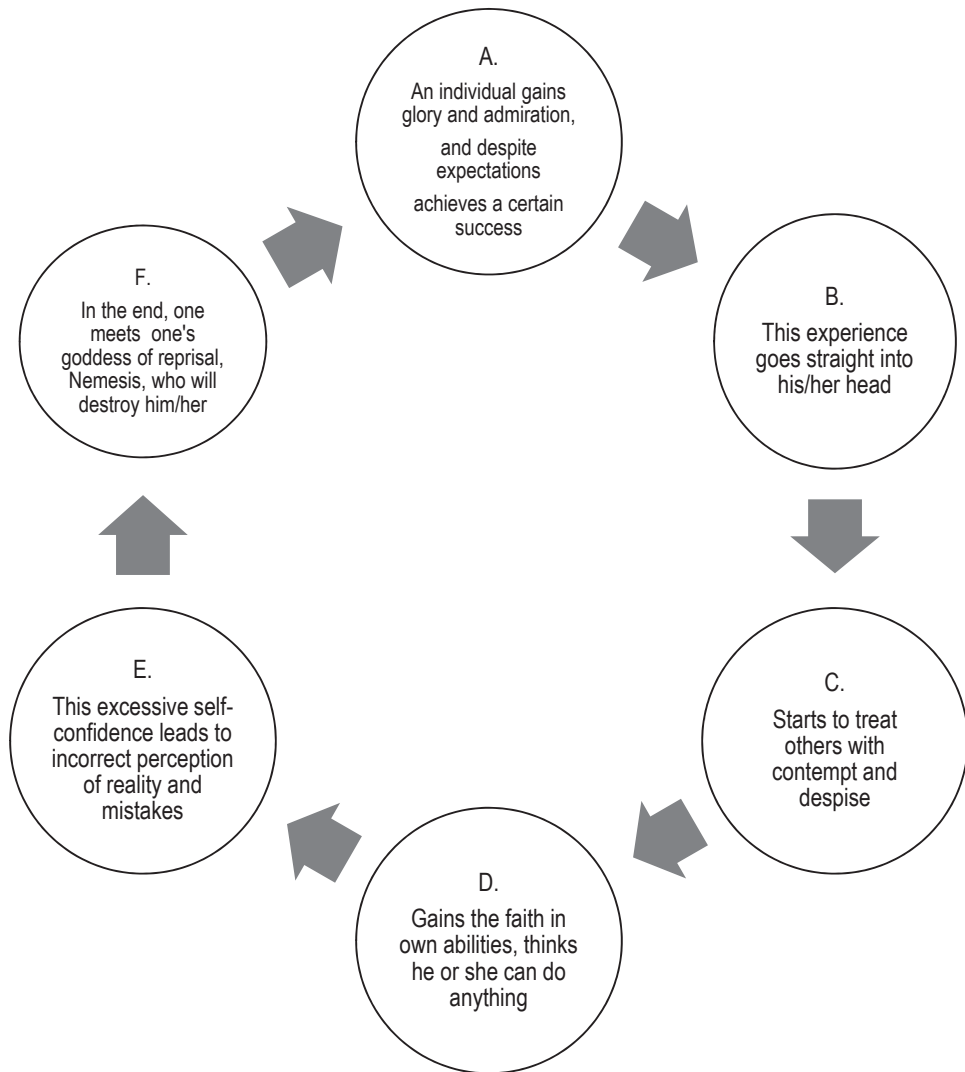


Figure 2. Hubris syndrome – a vicious circle

Source: own study.

So-called Hubristic incompetence where supreme overconfidence leads to inattention to details, the speech can be spoiled because a leader influenced by his or her exceeding self-confidence did not go into trouble to solve its practical aspects [Owen, 2011].

The hubris syndrome is set off by a trigger, which is power. Hubristic traits and the hubris syndrome appear after the acquisition of power. Among the key external factors influencing human behaviour clearly belong:

- Prevailing success in the acquisition of power and its holding.

- Political environment where there are minimal restrictions on the personal authority of a leader.
- Substantial power over a length of time.

4. Basic changes in the performance of the danger of citizens of national states of the European Union

We find ourselves in a difficult situation. The dismal economic situation is obvious, for the time being, it is only occasionally interrupted by signs of improvement of some economic indicators. The differences between „the old” and „the new” countries and the individual member states of European Union are not disappearing, on the contrary; the economic differences among the EU member states are striking. The multi-speed European Union simply exists. It looks like the dream of prosperous Europe without wars has dwindled away. We cannot close our eyes to the rolling tsunami of immigrants on the southern wind of the permeable borders to the EU from Africa, the situation in the nearby Ukraine, the so-called Islamic State (ISIS) and not to mention the radical political Islam. In addition, the Europe is dying out. The seriousness of the situation is in no way diminished by the fact that either we do not acknowledge the depth and scope of the crisis situation or we tend to downplay them. No doubt, the media and people in various managerial positions affected by blindness have their share in this state of affairs. Many advisors of political deputy ministers of various departments are not familiar with either the issues of the department or people in it. They lack just “a little thing” – certain knowledge of the sector, experience and empathy. And so „we” do not mind that we uncover to „the third party” the formerly unthinkable facts, stripping naked. Andor Sandor, [Šandor, 2018] appealing to reason and highlighting many professional misconducts, now reminds us of the Bedouin cry lost in the desert. The world around us is changing. We have two options: either to stand idly by or to be active. Unfortunately, the European bureaucrats are pushing the citizens into a vicious circle of their new ideologies and carefree materialism. Clear evidence of that is the Czech society. In this context it is easy to interpret a certain decline of democracy in recent municipal, parliamentary and, in particular in European elections. An inactive, but radicalizing disgruntled citizen at the pub dominates again. Surprisingly, this is of benefit to an active, so-called “apolitical” and “café” minority. Political parties do not admit themselves their own crisis. They don't seem to mind that political parties in the Czech Republic resemble political discussion clubs. It is sufficient to take a closer look at their members' base and the issues they deal with.

Emerging „non-political movements” with simple slogans for solution to intractable European problems are trying to brainwash the Europeans through media. Weird movements, whose members „work hard” and know, „how to do it” „are getting the green

light on Europe motorways. Petr Fiala states aptly in his essay entitled „At the end of carelessness” that: *„It only looks like a paradox. On one hand, I argue that the European Union has been going in the wrong direction, it has no good answers either to economic and social problems, or to the security issues and on the top of that the West as a whole implements insufficiently consistent policy to defend their interests. At the same time I say that the Czech Republic must be firmly, clearly and actively a part of this „problematic” Western community [Fiala, 2015].*

4.1. The aggressive war – brain drain and security

Despite the persistent convincing from the side of believers in the European post-modern and transnational paradise, it is obvious that the sovereignty and legitimacy of the national state is gradually dissolving along with its security in the supranational structures. It is qualification and education of the population that determines a position on the ladder of prosperity and security of a society. Day by day we can observe and be part of „the aggressive war” for a skilled manpower and the „brains”. „Brain drain” is a bloodless struggle for the present and the future welfare and security of all of us. In this “brain drain” the important role as always and everywhere play: (1) money, but also (2) more and more „quality of life”. Watching the foreign policy of the United States of America through rose-tinted glasses and blind obedience in the implementation of sanctions against one of the world nuclear superpowers and one of the largest countries in the world, the Russian Federation, is undoubtedly a mistake.

This contribution about the „new (non) hazard” in a broader context is coherent with collapse of the bipolar world, with the changes in the international environment over the past two decades, when, allegedly „an antagonist” disappeared and „the winner of the Cold War (World War III)” – U.S.A. emerged. In my view, it is desirable for the Czech Republic to focus on the BRICS countries (Brazil, Russia, India, China and South Africa). These countries represent 40 percent of the world's population and a fifth of the performance of the global economy.

Union pilots and politicians of the EU member states should be thinking about why the BRICS countries are unsettled by: a) repeating market shocks and b) wavering oil price. Furthermore, they should consider, why the countries of dynamically developing economies already decided at the summit in Ufa (July 2015) to: 1. Raise a mutual fund worth 100 billion USD and 2. Establish a development bank, i.e. the tools to fight against currency crises and to create a financial system independent on the West, particularly on the USA. I am asking a question, what exactly the security is and what it means to be (un)safe. It looks like there were no great unifying topics after the collapse of the USSR. And so we are fumbling and searching. We released the genie out of the bottle and now we do not know how to put him back. Big issues of the day such as ecology,

terrorism, elimination of poverty, migration wave, radical Islamism, ISIS, unfortunately do not evoke integrated action of all states.

Before the election they are all for the eradication of poverty (or at least unemployment rate reduction) and strengthening the security, but after the election it cannot cost them even a bit of their own wealth. Demands for flexibility and adaptability of states, companies and politicians in a turbulent environment and globalization processes of the 21st century are growing. For the vast majority of people, the ongoing local war conflicts are taking place on their TV screens and in the safety of their homes – this is changing their thinking and the attitude towards their own safety.

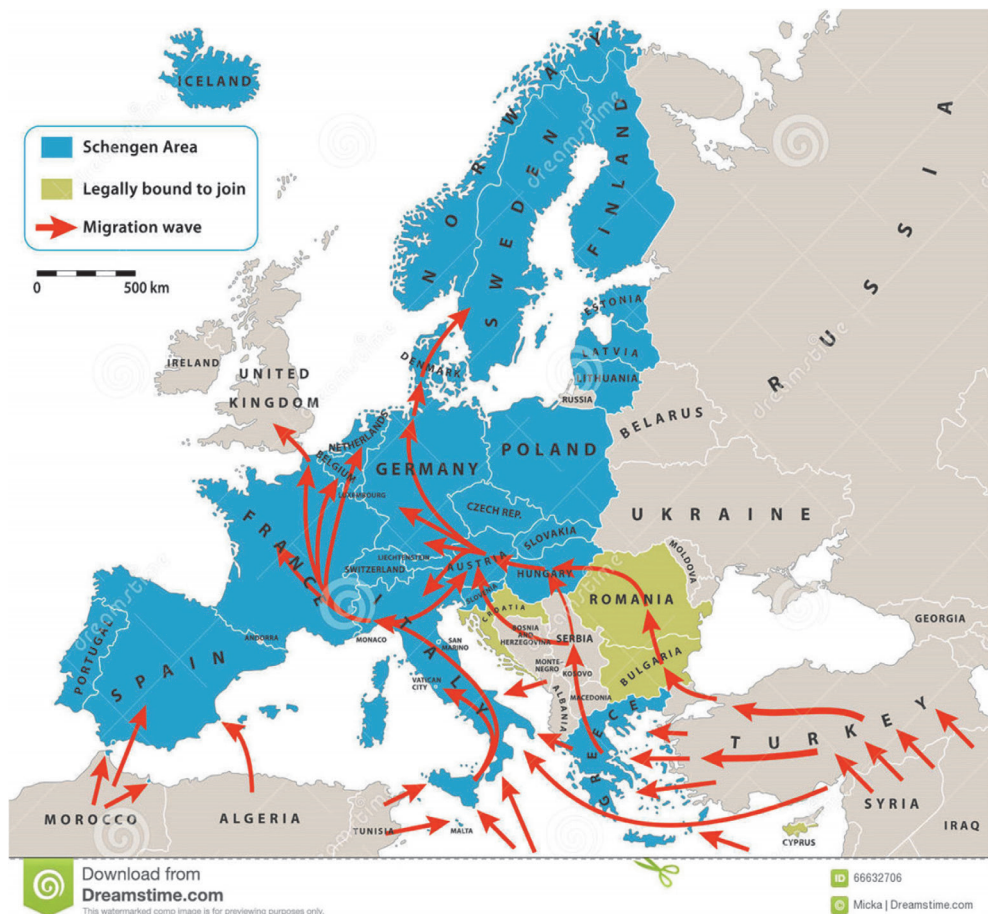


Figure 3. Main trends of migration to Europe / countries of the European Union

4.2. Free cross-border movement

Previously fragmented Europe turned into a super state, which is gradually taking control over earlier inalienable security and defence competences of national states. We are witnesses of Europeanization and of a fundamental transformation in perception of (in) security, but also of the changing relations between particular states. The Europeans dream of the free cross-border movement of people without degrading customs checks and personal searches came true by creating the so-called Schengen. It includes the territories of most European countries, where people can cross the borders of the contracting states at any place, without having to pass the border control. The same principle is valid for foreigners who have the so-called Schengen visa. And so, the great advantage of Europeans has become their weakest link. The consequence of a toothless defence policy of the EU is a failure to protect the EU borders and the imminent result is de facto opening of Europe to the wave of immigrants. The attractiveness of Europe and its high living standards of people living in strong welfare states are a paradise dream into which, quite logically, migration waves of people are rolling, reaching out their hands to the European wealth. Due to the opportunistic, hypocritical and irresponsible policy of „Brussels“, Schengen gets into a huge crisis. The entrance to nationalism in the EU countries is ajar. We are finding ourselves „at the end of carelessness“, as Professor Petr Fiala points out, but without any considerable response [Fiala, 2015]. In addition, the power centre of gravity to the great indignation of the French (winners of the last Great War) moves from Paris to Berlin (to the loser). If in a short term „Brussels“ does not take crucial and tough protective measures, we will shortly lose one of the greatest achievements of the free movement of people between the EU Member States. It is quite clear that if a European super state is not capable of protecting its sovereignty, it will be done by the member states alone. This would mean that a construction of liberty and freedom of movement would collapse like a house of cards. Politicians should seriously and with all due vigour react to the state of media, social networks and even pubs, that are full of debates about refugees. Some of them speak of the necessary solidarity, others point out an economic and social impacts that could be disastrous.

The optimal solution would be:

- 1) to come to terms that one excludes the other, i.e. „Schengen excludes quotas and quotas exclude Schengen“ (free movement of persons),
- 2) take clear and tough precautions to protect the external borders of the European Union,
- 3) improve procedures set for return of refugees,
- 4) reduce social benefits for refugees,
- 5) collaborate with the countries in regions in question,
- 6) toughen up penalties against traffickers and smugglers of people.

Without a certain political courage and adoption of tough and power arrangements there will be end to free and unrestricted movement of the Europeans in Europe, indeed, the democracy itself will be endangered. Czechs and Slovaks know only too well that independence can be lost, without firing a shot, that freedom and security are at risk if the „attacker” ends business relationships, stops supply of important raw materials (oil, gas, food, water) and energy and/ or prevent an access to important international institutions. Economic and political war takes place without a shot, but it is not more humane. The centre of gravity of national security is moving towards a new concept of international security. In the process of (un)approximation of winners and losers, a national state gradually loses its unique position. As Barry Buzan, Ole Waever and Jaap de Wilde state: „Security threats are not only of the military threats origin” [Buzan, Waever, Wilde, 2005]. The source of the threats can also be in non-negligible extent incompetent decisions and unwise public speech of people active in politics and then media response to their speech. In this context, we ask the question: „What is more dangerous: Good intentions combined with stupidity or an evil spirit associated with intelligence? Politicians with the help of powerful media and often corrupted editors are brainwashing and influencing millions of people through media. They take decisions with a far-reaching impact on the lives of these people. Hutchinson's prayer reminds physicians that their first duty is not to impair the patient's condition further. If we replace the word „patient” with the word „voters” this physician's prayer can become a politician's pray as well [Owen, 2011]. Politicians have a duty to intervene only if such intervention has a real chance to improve the current status and resist temptation of self-serving interventions. Thus the basic properties of physicians and politicians must be: 1. competence and 2. Ability of realistic assessment of what can be and what cannot be achieved. Anything that can make such an assessment difficult can inflict a considerable damage. However, probably the most unfortunate is an effort to breed a „new European man”. Attempts of some Brussels architects to change the thinking of Europeans by the force of political arguments strongly reminds of ill famous communist education and the unsuccessful attempt to create a new socialist man acting according to MOKOBUKO = Moral Code of Builder of Communism. As in then the CMEA countries, so now in the EU countries, the citizens live in accordance with their national traditions that resist any unification efforts.

5. Traditionalists versus wideners and security

Other risks reducing the security of the contemporary world, as highlighted by the Copenhagen School proponents are problems in the economic sphere and other processes, often of global origin. *Threats appear in new guises*. To the dangers and threats, without any doubt, belong the following: economic threats, the vulnerability of modern technology, computer crime, power blackouts, changes in the political field, high unemployment, so-called „non-diseases” (swine flu, AIDS, alcohol and drugs addiction),

crime, bribery, organized crime and its penetration into society, an aging Euro-Atlantic population, migration, population decline, piracy at sea and in the third medias and their technology, vanishing resources of oil, water, tropical forests and certain food. Also a loss of society's memory (see our last extraordinary parliamentary elections that were „outside” assessed as a total collapse of the party system established in November 1989), fading tolerance, increasing arrogance, changing face of democracy, flourishing bureaucratic structures, foolish elite and media, escalating aggression and an increasing desire of political parties and their representatives for power, stupid and arrogant decisions of politicians and media activity, political culture steeped in corruption and clientelism. Czech people see *clientelism and corruption* as a high security risk. All this logically offers up a change of view on the role of traditionalists' security studies that, in their implementation of strategic security visions and objectives, are limited to military-political topics. On the contrary, the „wideners” wish to include into the security studies also the current economic, social and environmental sectors. Economic threats are much more realistic than the military ones, and the likelihood that the society will endanger itself, is substantially higher than a risk of being militarily attacked from the outside [Robejšek, 2006]. In the opinion of the Copenhagen school representatives more important than a strong army is the defence against economic aggressions and social pressures/demands of immigrants pouring into Europe from countries whose culture is not only incompatible with our traditions, but also with the environment. However, traditionalists are neither willing, nor they are able to put this theory into practice.

Conclusion

The stability, freedom and democracy of the individual regions of Europe are threatened, among other things, by the fact that the national elite is clinging to the horizontal, non-systemic and chaotic governance of society. The current situation reflects the chaos in Africa and the Middle East and the changing conditions in Afghanistan. In Europe, a political, cultural, spiritual and physical disaster of cataclysmic proportions has been imminent, comparable to the fall of the Roman Empire and of Eastern Byzantium a thousand years later. Ostentatious humanists abuse the situation and undermine democratic principles and the fundamental values of Christianity on which European nation states stand. If they do so consciously or unconsciously, because of their cunning or stupidity, it does not matter. Politicians and the mass media let the Lucifer's genie out of the bottle. The Schengen borders are permeable – citizens of the EU member states are vulnerable. The security has been threatened not only by terrorism, radical Islamism, global or regional mass migration, caused by growing shortage of water, food, democracy and freedom in some parts of the world, but also by the attitude of the elites and the mass media, and by their hybrid behavior.

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Central European Review of Economics & Finance

Vol. 31, No. 3 (2019), pp. 35–49

DOI: 10.24136/ceref.2019.009

Received: 3 May 2019. Accepted: 24 June 2019.

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CORPORATE DELEVERAGING. LESSONS FROM THE POLISH EXPERIENCE (2006–2017)

Purpose – How long do firms need to reduce their debt level? We know from literature that this process cannot be completed rapidly and could be justified by the need to ensure financial flexibility or by the will to maintain a target leverage ratio. The purpose of this paper is to observe the behaviour of Polish firms in this process and the time needed (if any) to get back to the lower level in terms of debt. Our focal point is determining whether there are differences between firms in terms of size and sectors which could influence capital structure theories.

Design/methodology/approach – The debt level defined is the net debt ratio, observed over 12 years (from 2006 to 2017) with a trough level estimated at the median of the ratio over that period for a sample of 50 496 firms per year (average). We also analyse the evolution of two other ratios, net debt/fixed assets and operational cash-flow/net debt, to obtain greater precision in our observations.

Findings – In line with previous studies, we find that the process of getting back to the trough does not proceed very rapidly. However, this article is original because we find significant differences between firms in terms of size (3.27 years for small firms compared to 5.13 years for medium-sized firms and 3.77 years for large firms) and in terms of sectors. The trade-off theory could explain some patterns for small firms, whereas a more flexible version of the trade-off theory should be applied to large firms. For medium-sized firms, we should look for another explanation.

Originality/value – Our findings are consistent with a capital structure theory which focuses on differences between firms in terms of size and sectors regarding the behaviour of some firms with respect to debt. Models which deal with capital structure should not stick to a stationary target leverage ratio for explaining capital structure choices, and should segment their observations and explanations to make them more efficient.

Keywords: Debt, excessive leverage, capital structure theories.

JEL Classification Codes: O16.

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Introduction

The relationship between debt and equity is a fascinating subject which needs to be understood if we want to moderate the risk of excessive debt. Initially, according to literature, debt has no impact on the value of the firm (Modigliani, Miller, 1958). However, this conclusion changed quickly due to the external gift granted by the state in the form of tax deductibility of interest (Modigliani, Miller, 1963). That is why firms should theoretically look for an optimal debt ratio which will maximize their value. However, as shown by Graham (2000), firms are often far from the ratio predicted by models. Moreover, this ratio is not fixed, and changes significantly according to several parameters. One popular parameter for instance is the impact of growth. According to literature, the effect of growth on debt can be interpreted in two ways: Myers (1977) considers that the amount of a company's debt is inversely related to the growth opportunities, while Heshmati (2001), analysing Swedish micro and small firms, confirms that growth opportunity has a negative impact. On the other hand, Degryse and al. (2009) show, through an analysis of Dutch SMEs, that when firms are growing, they need more funds, so their debt increases: „when internal funds are depleted, long-term debt is next in the pecking order”. For France, Kouki and Said (2012) also find a positive and significant effect explained by the need for new external funds for financing new investment opportunities.

This inconsistency in literature is not new. We find it also in the debate between the trade-off and pecking-order theories. The first theory defends the existence of an optimal debt ratio. Firms choose debt finance or equity finance by comparing the tax benefits of debt with the dead-weight costs of bankruptcy (Kraus, Litzenberger, 1973). The second theory does not support the same view: firms will try to avoid external financing as often as possible, which means that their priority is to rely on internal funds. When they need external financing, they will prefer new debt to new equity because this sends a better message to investors.

Experimental applications of both theories produce controversial results. For quoted companies in the USA, Shyam, Sunder and Myers (1999) observe that capital structure decisions are closer to conclusions from the pecking order theory. On the other hand, Hovakimian, Opler and Titman (2001) conclude that results on trade-off are statistically significant. For this reason, Fama and French (2005) state that we cannot stick to one theory as a stand-alone theory of capital structure. Dealing with analysis of capital structure means that we have to face „discontinuities in financing behaviour” (Denis, McKeon, 2011) and we must try to look for „a rational explanation” (Denis, McKeon, 2011) for such patterns.

We would like to contribute to this literature by focusing our analysis on the behaviour of companies towards debt, and especially the time needed to get back to the lowest level.

When firms reduce debt, this can be a consequence of profitable years and the possibility for them to fund their activity and their investment using their internal funds only. On the other hand, this can be seen as a request from the market and from their lenders to reduce debt when it gets too high or a sovereign decision to get back to their target leverage ratios. Thus the observation of the time needed to get back to the lowest level of debt should be a good indicator in our quest to find a rational explanation for discontinuities in financing behaviour.

We know that empirically „debt reductions are neither rapid, nor the result of proactive attempts to rebalance the firm's capital structure toward a long-run target” (Denis, McKeon, 2011). For them, based on US companies, since 1971, the reduction has been quite low. Seven years are needed to reduce debt by 15% at least after the peak is reached. More recently, DeAngelo, Gonçalves and Stulz (2016) estimate that „the findings are consistent with proactive deleveraging to avoid distress and to restore financial flexibility and are hard to reconcile with materially positive target leverage ratios”. Based also on US companies but non-financial ones, from 1950 to 2012, they show that there is a „six-year median time from peak to trough”. In both cases, authors reject the strict existence of a target leverage ratio as a first-order priority, and

the reduction of the debt level is not so rapid. This means that models which deal with capital structure should not stick to a stationary target leverage ratio for explaining capital structure choices.

We would like to compare this observation with the evolution of debt for Polish firms between 2006 and 2017. Our sample consists of an average of 50 496 firms per year, of which 84.2% are small (turnover < 10 million €). If the debt reduction proceeds quite fast, this should indicate that Polish firms do follow a defined path in debt reduction and they would like to stick to a target leverage ratio. If this is not the case, it means that we will be far from some trade-off considerations and such behaviour can rather be explained by the need for financial flexibility and the possibility to grasp opportunities in the near future. Our article is original due to the sample and also method. We use a different method and different scales (by sector and by size). To estimate how many years are needed to get back to the trough debt level, we define the trough as the median of the debt level for a period of 12 years. In this paper, we discuss the lessons from literature in the first section, in the second section we present our sample and methodology, and in the third and last section, we observe the period needed to get back to the trough on different scales: country, sector and size.

Our findings show that even if at country level we observe a net debt ratio which is increasing and which tends to reach a new target, this observation is confirmed only for small firms when we narrow the analysis with regard to firm size. This is also true when we look at the indicator of time needed to get back to the trough. For large firms, we find also a target leverage ratio, but at a higher level. For medium-sized firms, data do not support the existence of this target, which means we confirm the position that

models which deal with capital structure should not stick to a stationary target leverage ratio to explain capital structure choices, and should segment their observations and explanations to make them more efficient. The analysis at sector level confirms this observation. The target leverage ratio should not be stationary and should fluctuate according to firms' size and sectors.

Corporate deleveraging behavior, lessons from literature

Citing Newton's first law of motion, „every body persists in its state of being at rest or of moving uniformly straight forward, except insofar as it is compelled to change its state by force impressed”, and applying it to trade-off models, the management of capital structure should be quite stable, with a targeted stationary leverage ratio which enables corporates to maximize their value (Almeida, Philippon, 2007). Of course, some changes are possible, but they should explain a deliberate movement to be closer to the target stationary leverage ratio or a necessary movement to reach a new target stationary leverage ratio (Flannery, Rangan, 2006). That is why, if authors support a dynamic approach towards capital structure decisions, the prerequisite is to support the view that companies adjust their level of debt to achieve a target debt ratio (Frank, Goyal, 2003). The level of target leverage could be more or less strict. For instance, Leary and Roberts (2005) suggest that firms target an optimal leverage „range” with low and high levels which act as boundaries. Interestingly, Hovakimian, Opler, and Titman (2001) show that the deviation from the target concerns principally firms that raise outside financing, and even more when corporates decide to repurchase some of their outstanding securities. Hovakimian (2004) shows that „only debt reductions offset the deviation from target leverage accumulated prior to the transaction...debt issues do not serve to reduce the deviation from the target debt ratio. The pre-debt-issue deviation from the target is essentially zero. The issuance of debt increases rather than reduces the deviation from the target”. Denis and McKeon (2011) show also that „our sample leverage increases represent deliberate decisions to move the firm away from estimates of its long-run target leverage ratio”. The proof they give for this is that many firms decide deliberately to increase pay-out to equity holders and do not use such funds to reduce the level of debt and get back to their long-term target. Based on such studies, we cannot conclude that all movements toward the target are a first-order consideration. Even if managers and/or shareholders have a defined targeted level, the rebalancing process will be necessarily slow because several parameters are always in force (Harford, Klasa, Walcott, 2009). For instance, Leary and Roberts (2005) show that „while firms appear to follow a dynamic rebalancing strategy, information asymmetry costs may be an important determinant in their financing decision” and can explain some delays in the dynamic. Denis and McKeon (2011) observe in that way that seven years are needed

to note a determinant reduction in debt. DeAngelo, Gonçalves and Stulz (2016) reach the conclusion that it takes six years (median).

Database and methodology

We use the BACH database (www.bach.banque-france.fr) for our empirical observations. The period analysed is 12 years, from 2006 until 2017. As stated on the website, „the data are based on the annual statistical financial statements collected by Central Statistical Office. The survey comprises enterprises of more than 9 employees”.

We make a comparison between sectors according to the NACE classification of economic activities based on Regulation (EC) No 1893/2006 of the European Parliament and of the Council, 20 December 2006. NACE is the „statistical classification of economic activities in the European Community” and it is the acronym for „nomenclature statistique des activités économiques dans la Communauté européenne”. We use the 16 sectors presented in Table 1.

Table 1. Summary of sectors used in the analysis

1	Accommodation and food service activities
2	Administrative and support service activities
3	Agriculture, forestry and fishing
4	Arts, entertainment and recreation
5	Construction
6	Education
7	Electricity, gas, steam and air conditioning supply
8	Human health and social work services
9	Information and communication
10	Manufacturing
11	Mining and quarrying
12	Other service activities
13	Real estate activities
14	Transportation and storage
15	Water supply, sewerage, waste management and remediation act.
16	Wholesale and retail trade; repair of motor vehicles and motorcycles

Source: prepared by the author

We also narrow down the analysis according to firm size. We make a distinction between small firms (turnover < 10 million €), medium-sized firms (10 million € ≤ turnover < 50 million €) and large firms (turnover ≥ 50 million €).

In our sample, small firms are dominant (Table 2).

Table 2. Firms per size in our sample

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Average	Share
Large	1.197	1.459	1.702	1.338	1.558	1.701	1.755	1.804	1.870	1.963	1.936	2.156	1.703	3,4%
Medium	4.733	5.554	6.342	5.294	5.941	6.330	6.395	6.438	6.771	6.988	6.865	7.396	6.254	12,4%
Small	38.972	38.899	42.356	44.337	42.741	43.046	43.275	44.799	44.658	42.865	44.208	40.309	42.539	84,2%
Sum	44.902	45.912	50.400	50.969	50.240	51.077	51.425	53.041	53.299	51.816	53.009	49.861	50.496	100,0%

Source: prepared by the author.

To assess corporate deleveraging, we use the net-debt ratio (ND/TA), which is net debt (ND) divided by total assets (TA) in book terms. To avoid the effect of change in the number of firms per year, we divide the ratio by the number of firms. For debt (D), we add together bonds and similar obligations („bonds and similar securities issued by the entity”) + amounts owed to credit institutions („debt of the entity vis-à-vis credit institutions (includes financial leasing)) + other creditors + trade payables („debts to suppliers of goods and services, net of advances made (except for payments on account’’)). We reduce the debt by the „cash and bank” to get the net debt (ND). Total assets (TA) in book terms are immediately given in the data base („Total assets (€ thousands)’’). We also observe two other ratios: the first is ND/FA between net debt (ND) and fixed assets (FA), calculated as the sum of „Intangible fixed assets” + „Tangible fixed assets” + „Financial fixed assets” - „details of financial fixed assets relating to investments in (holdings of shares in the capital of) associates, subsidiaries and jointly controlled entities”. The second is CF/ND with operational cash-flow (CF) calculated as the sum of „net profit or loss for the period” + „Provisions (net of reversals)” + „Extraordinary expenses and impairments (net of reversals), except on inventories and receivables” + „Impairments (net of reversals) on inventories and receivables” + „Depreciation and amortization on intangible and tangible fixed assets” and net debt (ND). For FA and CF, to avoid also the effect of change in the number of firms per year, we divide the amount by the number of firms.

Empirical observations from the Polish experience (2006–2017)

We start our analysis by observing data gathered on a country scale taking into account the effect of changes in the number of firms. Our first observation is that our debt net ratio (ND/TA) does not change significantly over the period. Our median absolute deviation (MAD) is low: 0.9% for a median at 25.3%. The trend looks like a quest to reach a higher target leverage ratio.

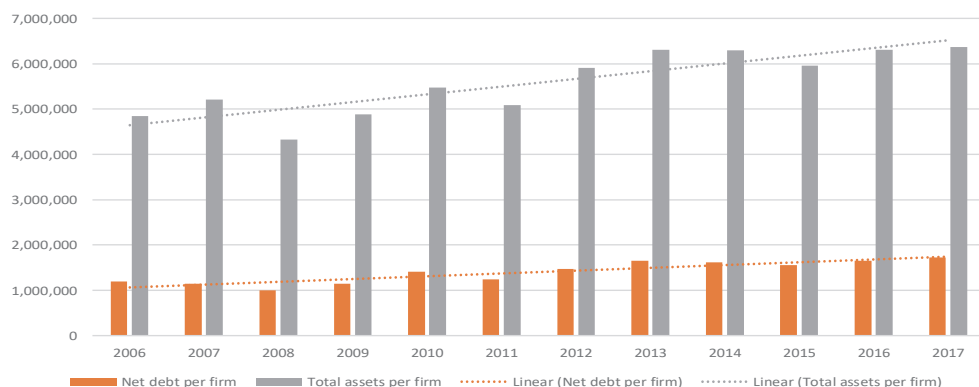


Figure 1. Debt net ratio of all firms in Poland (2006–2017)

Source: prepared by the author.

When we look at each variable in the debt net ratio, we have more volatility for TA (MAD at 608 894) than for ND (MAD at 206 649). Interestingly, we have a correlation between TA and ND.

Table 3. Correlation matrix (Pearson) between ND and TA for all firms in Poland (2006–2017)

Variables	NET DEBT	FIXED ASSETS
NET DEBT	1	0.959
FIXED ASSETS	0.959	1

Source: prepared by the author.

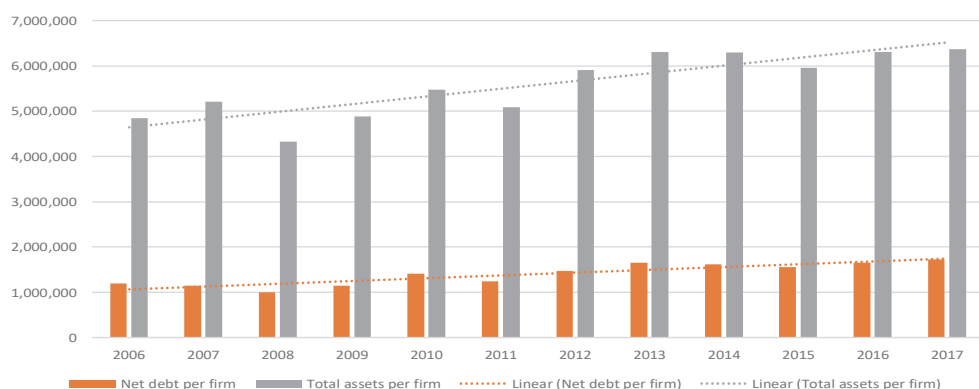


Figure 2. ND and TA for all firms in Poland (2006–2017)

Source: prepared by the author

On a country scale, we observe that from 2006 until 2017, we have a correlation between TA and ND, as both significantly increased over the period (+44% for net debt and +31% for total assets). We have more volatility for TA than ND. Our debt net ratio increased over this period, which means we can confirm existence of an optimal leverage „range” on a country scale and the quest to reach a higher level. However, our results must be made more precise by an analysis at sector level. Now we will look at evolution of ND and FA. Interestingly, we also find a correlation between ND and FA.

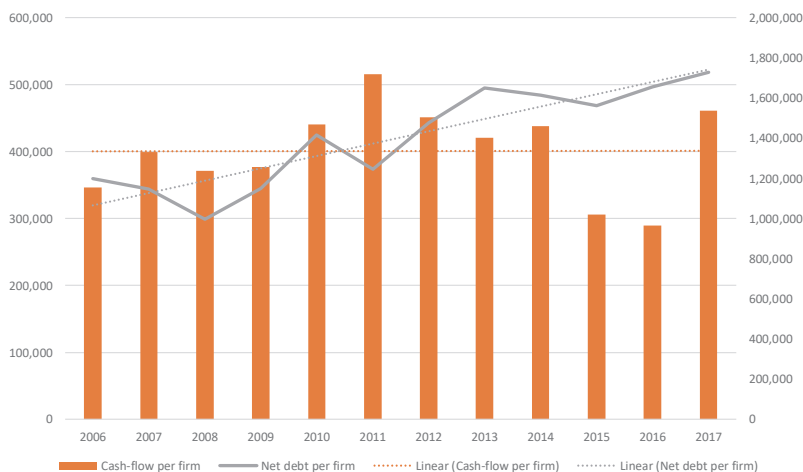


Figure 3. ND and FA for all firms in Poland (2006-2017)

Source: prepared by the author.

Table 4. Correlation matrix (Pearson) between ND and FA for all firms in Poland (2006–2017)

Variables	NET DEBT	FIXED ASSETS
NET DEBT	1	0.959
FIXED ASSETS	0.959	1

Source: prepared by the author.

On a country scale, we observe that from 2006 until 2017, we have a correlation between ND and FA, as both significantly increased over that period (+44% for ND and +51% for FA). This means that firms fund their acquisition of fixed assets using additional debt. They seem to do this even when we note a positive variation of cash-flow, because we have no correlation between ND and CF.

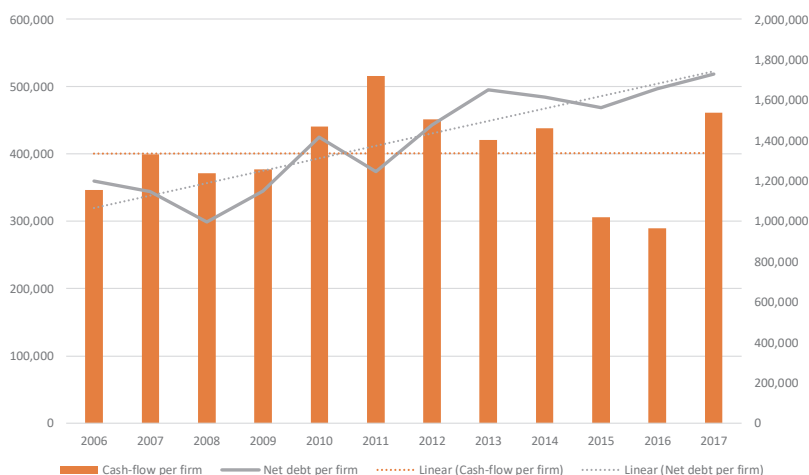


Figure 4. ND and CF for all firms in Poland (2006–2017)

Source: prepared by the author.

Table 5. Correlation matrix (Pearson) between ND and CF for all firms in Poland (2006–2017)

Variables	NET DEBT	FIXED ASSETS
NET DEBT	1	0.030
FIXED ASSETS	0.030	1

Source: prepared by the author.

To summarise, we observe quite a stable ND over the period with a correlation and major increase of ND and FA, and a more stable evolution of CF, but no correlation with ND. By keeping a range of net debt towards total assets, firms have invested in fixed assets mainly with debt in comparison with the use of internal funds (CF).

On a country scale, a trade-off view of firms' behaviour can be observed only if we agree on a flexible range of target leverage ratio and an objective to reach a higher level. Moreover, debt is used even if internal funds were available.

Small firms are dominant in our sample, as they represent 84.2% of all firms (in total from 2006 until 2017). Medium-sized firms (12.4%) are therefore more important than large firms (3.4%). When we look at the MAD for the net debt ratio, we have greater variation for large firms (MAD at 1.0%) than for small firms (MAD at 0.7%) and for medium-sized firms (MAD at 0.5%). If we look at the distribution of the net debt ratio, for small firms we have a picture of an established range. For medium-sized firms, we have a more stabilised period of six years with two major changes in the opposite direction. For large firms, the trend looks like a quest to obtain a new range.

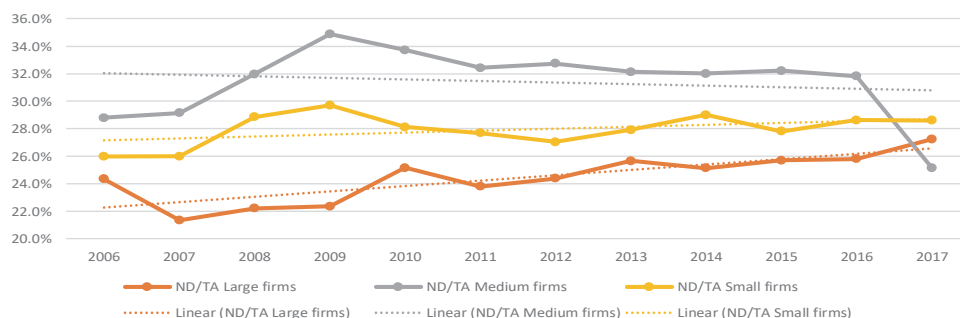


Figure 5. Debt net ratio according to size of firms in Poland (2006–2017)

Source: Prepared by the author

Looking at size, the observation of existence of a target net debt ratio is true only for small firms, which are dominant in our sample.

When we look at the ND/FA ratio, we get a picture of a target ratio for small and large firms. For medium-sized firms, the variations are significant.

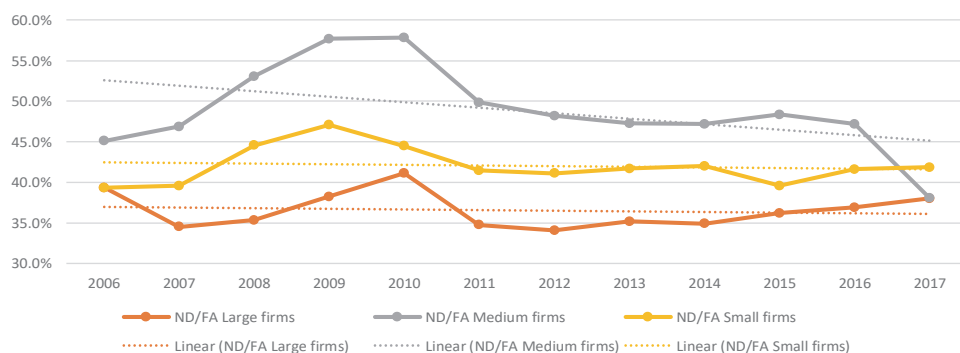


Figure 6. ND/FA according to size of firms in Poland (2006–2017)

Source: Prepared by the author

Finally, between CF and ND, we observe a decrease for all kinds of firms. Large firms show major variations between years, whereas small and medium-sized firms tend to show a more stable decreasing ratio.

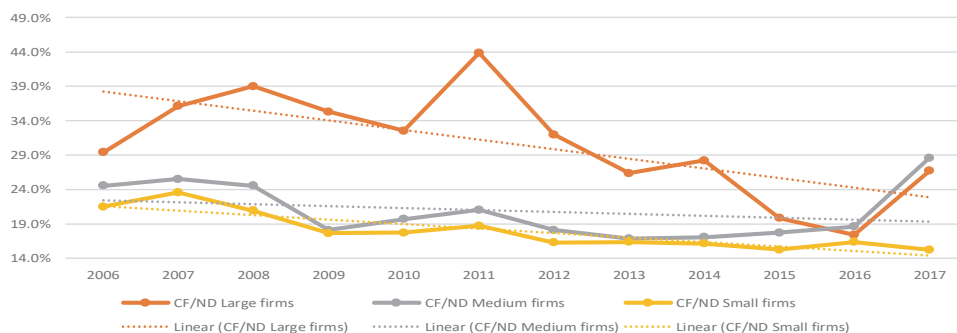


Figure 7. CF/ND according to size of firms in Poland (2006-2017)

Source: Prepared by the author

To summarise, we observe, with respect to size, existence of a target leverage ratio mainly for small firms, confirmed by its ND and FA ratio. Large firms show an objective to reach a higher level. For medium-sized firms, we have a more nuanced situation which is different than the previous ones.

For the analysis per sector, we use the method of calculating the difference between the debt net ratio of the year and the median of the period (our trough). If the difference is less than 1% or more than -1%, we consider the trough to be reached. If the difference is not in that range, we consider it at an upper or a lower limit and we calculate the number of years needed to get back to the trough. We then take the average number of years needed to get back to the target per sector. For instance, for small firms in the sector of accommodation and food service activities, we need three years, then 1 year, then four years, and finally 1 year. On average, from 2006 until 2017, small firms in the accommodation and food service activities sector need 2.25 years to get back to their trough.

Table 6. Distance between the debt net ratio and the median per year for small firms in the accommodation and food service activities sector from 2006 until 2017

2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
-11.4%	-13.5%	-6.3%	-0.8%	-1.7%	0.8%	3.0%	1.9%	3.0%	4.5%	0.8%	-4.8%

Source: prepared by the author.

If we apply the same method for all firms, we observe a longer period for larger firms. Small firms need in total 1.25 years to get back to their trough, whereas medium-sized firms need 1.67 years, and large firms 2.00 years.

If we take the average for all sectors, we also get the shortest period for small firms. For small firms, the average is 3.27 years, compared to 5.13 years for medium-sized firms and 3.77 years for large firms.

We now analyse this more thoroughly, at sector level. We define the upper limit as a period of five years or more to get back to the trough and the lower limit as a period of less than two years to get back to the trough.

When we look at the upper limit with sectors with the longest period (> of five years), four sectors are common to at least two categories of firms. Interestingly, we have sectors with period of 12 years, which means that during the period analysed, firms in that sector (on average) do not get back to their trough. Five of those 10 sectors are sectors which are capital intensive. Therefore we can easily imagine that the level of debt is strongly evaluative according to the volatility of the projects' needs, which require generally a high level of funds.

Table 7. Sectors with the highest period needed to get back to their targets from 2006 until 2017 according to size of firms

Sectors with highest period (>5 years)	Small	Medium	Large
Arts, entertainment and recreation	12.00	12.00	
Electricity, gas, steam and air conditioning supply	5.00		5.50
Agriculture, forestry and fishing	5.00		
Mining and quarrying		5.00	5.00
Other service activities		10.00	
Wholesale and retail trade; repair of motor vehicles and motorcycles		5.00	
Human health and social work services		12.00	8.00
Transportation and storage		12.00	
Administrative and support service activities			12.00

Source: prepared by the author.

When we look at the lower limit with sectors with the shortest period (less than two years), we have less sectors, 7 sectors compared to nine sectors in the previous case. However, just two sectors are common to at least two categories of firms. The period needed to get back to the trough is less than two years, which advocates the existence of quite a strict target and the will to stick to it. For some sectors like real estate, this observation can be justified by the existence of bank loans. When companies take out a loan with a bank, they have the obligation to respect a defined level for some ratios, like the debt-service coverage ratio:

$$\frac{\text{EBITDA} - \text{IS}}{\text{Capital} + \text{interest}}$$

and that could explain why they must keep a stricter level of debt.

Table 8. Sectors with the shortest period to get back to their targets from 2006 to 2017 according to size of firms

Sectors with lowest period (< 2 years)	Small	Medium	Large
Administrative and support service activities	1.75	1.20	
Transportation and storage	1.20		
Wholesale and retail trade; repair of motor vehicles and motorcycles	1.75		
Information and communication		1.75	1.00
Accommodation and food service activities			1.75
Real estate activities			1.50
Water supply, sewerage, waste management and remediation act.			1.25

Source: prepared by the author.

Between those two limits, we have in total 15 sectors, which means that on average firms need between two and five years to get back to their target. This illustrates the fact that firms could have a fluctuating target. The second important observation is that all firms have only one sector in common. This means that corporate deleveraging fluctuates strongly according to sectors and firm size.

Table 9. Sectors with a mid-length period to get back to their targets from 2006 until 2017 according to size of firms

Sectors with mid-length period (> 2 years and < 5 years)	Small	Medium	Large
Accommodation and food service activities	2.25	2.33	
Construction	3.00		4.50
Education	2.25	3.33	
Human health and social work services	3.00		
Information and communication	2.25		
Manufacturing	3.33	2.67	2.67
Mining and quarrying	3.00		
Other service activities	2.00		3.00
Real estate activities	2.33	3.00	
Water supply, sewerage, waste management and remediation act.	2.33	3.33	
Agriculture, forestry and fishing		2.33	2.25
Electricity, gas, steam and air conditioning supply		3.33	
Arts, entertainment and recreation			2.25
Transportation and storage			4.00
Wholesale and retail trade; repair of motor vehicles and motorcycles			2.00

Source: prepared by the author.

Conclusion

We studied corporate deleveraging in Poland in the period from 2006 until 2017 according to size and sectors of Polish firms. We based our empirical tests on the premise that we have „deliberate movements away from estimates of the target leverage ratio...and that movement toward the estimated target leverage ratio is not a first-order consideration for the sample firms” (Denis and McKeon, 2011). This explains why we estimate as a trough the median of the net debt ratio. We also observe in our sample „discontinuities in financing behaviour” (Denis, McKeon, 2011) and we try to look for „a rational explanation” (Denis, McKeon, 2011) for such patterns.

Our explanations and observations are limited to a flexible version of a trade-off with a fluctuating range of target debt ratio. Interestingly, however, this is true mainly for small firms. For large firms, we reach the conclusion that they look for a new target leverage ratio. For medium-sized firms, it is very hard to estimate a pattern.

Regarding the time needed to get back to the trough, Denis and McKeon (2011) estimate 7 years, whereas DeAngelo, Gonçalves and Stulz (2016) find six years as a median. Using a different method, we find a shorter period for getting back to the trough, between 3.27 years for small firms, 5.13 years for medium-sized firms, and 3.77 years for large firms. With respect to sector, we observe that a majority of firms per sector have a period of between two and five years. However, we observe also significant volatility between sectors, with some sectors with periods of more than five years. Such versatility makes comparison between firms trickier and should be taken into account in the analysis of corporate structure behaviour. We share the observation that models which deal with capital structure should not stick to a stationary target leverage ratio for explaining capital structure choices, and should segment their observations and explanations to make them more efficient. Future research may focus on such differences between size and sectors between countries to deepen the analysis of corporate financials' behaviour.

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