FUTURE
of the Visegrad Group

ABBREVIATED VERSION:
THE FUTURE OF FINANCE

GLOBAL SHAPERS COMMUNITY WARSAW

Lesław A. Paga Foundation

Visegrad Fund

FOREWORD

Wojciech Przybylski
Editor-in-chief
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2016 marks a quarter of a century in a pro-Western trajectory of four Visegrad countries. The group, formally established on February 15th, has had two basic goals. One was to join NATO to increase security and independence from Moscow. The second was to join the common European (Western) project for prosperity and security of our societies. Both goals seemed to have been fulfilled in 2004.

The Visegrad countries have been co-coordinating their diplomatic efforts to facilitate the withdrawal of the Red Army from their territories, finally accomplished in 1993 - at first, before the formal establishment of the cooperation. Then, parallel efforts to meet harsh criteria of accession were made. One may argue which of those processes have been more transformative. There is no doubt, however, the economy and infrastructure would not be developed without the process of EU enlargement, if not an unprecedented effort by Central European societies to reform, rebuild, and modernize that has been met by support comparable only to the Marshall Plan funds for Germany launched in 1948.

One may compare the process of change to a train trip. The departure station has been somewhere in the east, the next station was in the west, but currently the destination is unknown. We had to speed up the train and set up its tracks to get to where we are. Once set in motion, the train is still on the move. The growing ambitions and appetites reinforce and push the European project further, with its economic, infrastructural, and political potential. Today, the New Europe does not mean solely that much of a political struggle for independence in geopolitical terms, but more a search for new engines of growth and development. The Visegrad Group is exploring this direction and seeks to improve its own, hence European competitiveness. Under the EU strategy, the V4 countries seek development through innovation, healthy fiscal policies, and bettering energy and transportation infrastructure. Often, those efforts are blurred and overshadowed by current political developments. But by any means, they are not supposed to be disregarded. They are one of cornerstones to secure the fundamental accomplishments of those last 25 years.

Therefore, it must be stressed this report explores the key areas of future cooperation. It is an explorative and informative reading, prepared by the future leaders, who at an early stage of their careers, demonstrate how a visionary approach may meet excellent analytical skills. If one wondered about the future after 25 years of cooperation, one finds many answers in this report. It is a must read for all interested in prospects of the European project from the Central European perspective.

ACKNOWLEDGMENTS

This publication originates from a sincere concern about the region's future. Being proud of the region's development over the last 25 years we were looking for ways to influence its development in future. Seeking for like-minded supporters, we have found exceptional people, who supported us in our endeavours of creating this report.

First of all, we would like to recognize the invaluable contribution of the Lesław A. Paga Foundation, which daily inspires us to thrive for the best in our professional and personal lives. The Foundation has constantly supported us throughout all stages of the project – from finding an appropriate team to enabling us to contribute to the public debate with our findings. This report would not be possible without the Lesław A. Paga Foundation.

We wish to thank Global Shapers Warsaw Hub, which supported us with providing us with an exceptional network of brilliant minds. We hope that the ongoing feedback on our ideas helped the report to become visionary and practical at the same time. We highly appreciate the support of all the reviewers engaged from across the region, who generously invested their time and ideas in our initiative. We would like to thank you in detail at the end of our report. We wish to acknowledge the support provided by our partners Aspen Institute Prague, Republikon Institute form Hungary, Res Publica from Poland and the International Visegrad Fund, which funds this publication. We are looking forward to further initiatives to facilitate the collaboration of Visegrad.

Finally, we give our sincerest thanks to the whole team of V4 Future: Joanna Rycerz, Petra Kaciakova, Damian Szewczyk, Sebastian Wieczorek, Zsombor Incze, Tomasz Nisztuk, Ondřej Dvouletý, Dominik Keil and Piotr Krzemiński. The debates from across the region proved not always to be easy, but worthwhile!

Sincerely Yours,

Damian Polok and Paweł Michalski
Project Leaders V4 Future

Damian Polok

Paweł Michalski

ABOUT THE LESŁAW A. PAGA FOUNDATION

Since 2003, the Lesław A. Paga Foundation has enabled young leaders to excel their potentials by actively contributing to the shape of the region's future. The foundation aims at creating a network of highly ambitious students and young professionals, who not only seek to advance in their professional lives, but also want to make an impact in their immediate environment and society. Our educational projects cover the fields of:

- Capital markets (Capital Market Leaders Academy, CEE Capital Market Leaders Forum),
- Energetics (Academy of Energy; New Energy Forum),
- Healthcare (Healthcare Leaders),
- Technology and innovations (Young Innovators, Innovation Day)
- Media (Academy of Analysis and Media)

The Alumni of the Foundation are given unique chances to learn from the best experts and gain practical experience in over 70 partner companies. There are about 500 Alumni, who support each other not only professionally, but also on the private ground.

It is also our mission to promote the highest ethical standards and culture among entrepreneurs. This is why, every year, we grant the Lesław A. Paga award to businessmen, activists, and institutions. This honorary distinction constitutes a commemoration of our Patron's work. In previous years, the winners were: Krzysztof Lis, Leszek Czarnecki, Leszek Balcerowicz, Igor Chalupec, Joseph Wancer, Janusz Lewandowski, prof. Grzegorz Domański, Zygmunt Solorz-Żak, prof. Marek Belka, Jacek Siwicki, and Hebert Wirth.

Our vision of promoting the highest ethical standards is not limited to professionals and students. We give secondary school students the opportunity to participate in the Stock Market Game (SIGG), and those who finish their secondary education can apply for the Indeks Start2Star Scholarship, awarded during the whole period of studies.

Apart from our regular projects, we organize conferences, workshops, and lectures, whose speakers are the best specialists of the Polish and European markets.

Lesław A. Paga
Foundation

CEE Capital Market Leaders Forum

In 2014, the Leslaw A. Paga Foundation organized, with the Warsaw Stock Exchange as the strategic partner, the first edition of international CEE Capital Market Leaders Forum. We are proud of organizing the first event for bringing together and growing new generations of capital market leaders.

The main idea of the event is to establish a communication platform for regional peers, which enables young leaders to experience and participate in professional workshops that combine theoretical knowledge with capital market practice. The Forum intends to create a framework to create lifetime networks, aimed at developing future international collaboration in the center of Europe.

Lesław A. Paga (24.09.1954 – 02.07.2003)

Lesław A. Paga was one of the forefathers of the capital market in Poland. As an expert in macroeconomics, ownership transformation, and capital market sector, he co-created the Polish Securities Trading Act, the Act on Bonds, and other securities trading acts of law. He specialized in managing enterprises, strategy, and restructuring. He conducted projects related to an enterprise strategic assessment, managing by values, investors' relations, and investigations concerning financial crimes.

Lesław A. Paga was respected by entrepreneurs and all political wings. After 1989, he was advisor to various prime ministers. Faced with corruption scandals in Poland and other countries, he fought for corporate governance, transparency, invitations to tender, and any business activity. He was a tough negotiator, devoted to his mission. Notwithstanding difficulties, he always examined problems holistically.

Lesław A. Paga was a versatile person - having graduated from science studies, he also took interest in the humanistic field. He was fascinated with classical music, contemporary literature, and theatre. He enjoyed directing. Lesław A. Paga was a creative man, whose enthusiasm and positive attitude towards life motivated other people.

FUTURE

of the Visegrad Group

INTRODUCTION INTO THE PROJECT

> *[We, the young] should develop our vision, we should have a view that in a sense a prescientific of what the game is about, about the way the beast functions, about the way the various parts of economics and social science are related and, yes, about our own maps of Utopia. Once we have a vision, then our control of theory, our command of institutional detail, and our knowledge of history are to be marshalled to support the vision.*
>
> *- Hyman P. Minsky*

The Visegrad Group celebrates its 25th anniversary. The 1991 meeting in the city of Visegrad, old capital of Hungary, provided for a link to a meeting held almost 7 centuries ago at the same place. In 1335, the Visegrad Castle hosted King of Bohemia John of Luxembourg, King of Poland Casimir II, and King of Hungary Charles I of Anjou. The first Visegrad meeting tried to establish closer relationship and cooperation among the three kings and their states. The aim of both were the same – to guarantee peace and facilitate cooperation.

In both cases, the members of the Group agreed on many things they had in common. In the 90s, the former communist countries, with historical enmity often resulting in open struggles, saw a possibility to join forces, once again, to jumpstart their European integration process. And so, on 15th February 1991, at a meeting of the President of the Czechoslovak Republic Václav Havel, the President of the Republic of Poland Lech Wałęsa, and the Prime Minister of the Republic of Hungary József Antall, the Visegrad Group was established. With the dissolution of Czechoslovakia, in 1993, into two independent countries -the Czech Republic and the Slovak Republic, the Group grew into four members. From that time, the Group is commonly referred to as the Visegrad Four or V4.

Before the establishment of the International Visegrad Fund, in 1999, there were no common agendas, nor regular meetings and discussion among the Group Members, except for NATO and European Union enlargement talks. Then, in 2002, the Expert Working Group on Energy commenced its works. After the V4 countries joined the European Union on May 1st 2004, the regional cooperation precipitated. In 2011, the Group formed the Visegrad battlegroup to serve as an EU Battlegroup in 2016 and in 2019. Some successful trade and diplomatic initiatives happened along the way. And so, the 25 years passed.

The fathers of V4 created foundations and new forms of political, economic, and cultural cooperation in the altered Central Europe. They strived to achieve full restitution of state independence, democracy, and freedom after decades of a totalitarian system. And they, we succeeded on many fronts. But these achievements are merely a stepping stone. New challenges lie ahead of us, and we need to aim high, once again. Especially in terms of economic cooperation, there is a lot to be done to reveal the full potential of the V4 countries. In our mid-20s, we are the V4 offspring, and it is our generation that will shape the next 25 years of the Group. We feel responsible for our countries, and that is why we decided to speak up about the future in which we would like to live.

Just as the regional rulers in the XIVth century and democratic presidents in the 1990s, we were looking for ways to join forces and face the upcoming challenges. That is why we prepared recommendations for the next steps to be taken to improve V4 cooperation. Although our ideas are often supported by numerical data, our aim was to be visionary, therefore, more qualitative than quantitative. We hope for this report to start a serious discussion about the future and a true dialogue between generations. In the months following the publication of this report, we plan to build on this idea. We hope to mobilize experts, industry specialists, business leaders, and public officials to help us prepare detailed plans to achieve our goals.

Dear Reader, we wish you an inspiring lecture. And for you, dear Visegrad Group, we wish all the best for the 25th birthday. Let the next 25 be even better!

INTRODUCTION INTO THE REPORT

"Know from whence you came. If you know whence you came, there are absolutely no limitations to where you can go."

- James Baldwin

To shape the future, it is necessary to analyse the past. Therefore, before exploring our potential, we gathered a wide range of information on our economic development over the last 25 years. This data is not exhaustive, but will give our readers a rough picture of what the V4 countries have accomplished so far.

The following chapters present our vision on the V4 economic development in the fields of entrepreneurship, finance, energy, and infrastructure. We also prepared a short case discussion on the matter of adopting EURO as a common currency in all Visegrad countries. We hope, in the months and years to come, we can build upon our recommendations and actively participate in the ongoing transformation of our economies.

1. VISEGRAD GROUP ECONOMIES UNVAILED

Ondřej Dvouletý

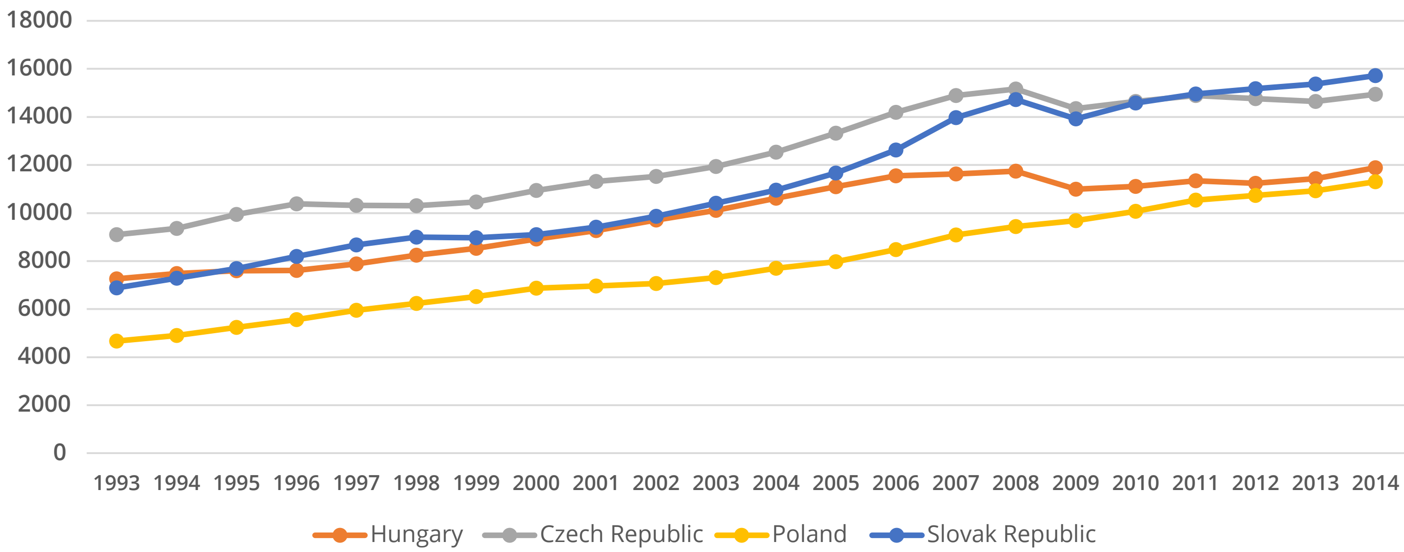
Over the last 25 years, the V4 countries grew significantly and became **richer in economic terms** (Table 1). This can be observed in the development of the life expectancy rates and the GDP per capita (Figure 1). After the fall of communism, the Visegrad Group member states **integrated their economies into international trade**, which contributed to the countries' GDP. The rising number of people obtaining tertiary education indicate the **ongoing transformation into knowledge-based economies**.

Table 1: General statistics of V4 countries

Country	Czech Republic		Slovakia		Poland		Hungary	
Indicator								
Population in 2014	**10 510 566**		**5 418 506**		**37 995 529**		**9 861 673**	
Surface area (sq. km, 2014)	**78 870**		**49 036**		**312 680**		**93 030**	
Average GDP growth for years 1993-2014 (%)	**2,4**		**4,0**		**4,2**		**2,0**	
Year	**1993**	**2014**	**1993**	**2014**	**1993**	**2014**	**1993**	**2014**
GDP per capita (constant 2005 US$)	**9 095**	**14 945**	**6 884**	**15 727**	**4 665**	**11 305**	**7 255**	**11 888**
Unemployment rate (%)	**4,3**	**6,1**	**12,2**	**13,2**	**14,0**	**9,0**	**12,1**	**7,7**
Merchandise trade (% of GDP)	**71,9**	**158,6**	**71,6**	**168,9**	**36,4**	**79,3**	**53,7**	**157,0**
Year	**1993**	**2013**	**1993**	**2013**	**1993**	**2013**	**1993**	**2013**
Life expectancy at birth (years)	**72,8**	**78,3**	**72,4**	**76,3**	**71,6**	**76,8**	**69,1**	**75,3**
Year	**1995**	**2013**	**1993**	**2013**	**1993**	**2013**	**1993**	**2013**
Health expenditure, total (% of GDP)	**6,7**	**7,2**	**6,1**	**8,2**	**5,5**	**6,7**	**7,3**	**8,0**
Year	**1998**	**2013**	**1993**	**2013**	**1993**	**2013**	**1993**	**2013**
Population with tertiary education as a share of population 15-64 (%)	**8,5**	**19,1**	**8,1**	**18,1**	**8,5**	**23,8**	**10,6**	**20,2**

Source: World Bank and Eurostat (2015)

Figure 1: GDP per capita in constant prices (2005)



Source: World Bank and Eurostat (2015)

1.1 Competitiveness

To compare the V4 economies, we used several indices, including political stability, competitiveness, innovativeness, and law enforcement rankings (Table 2). Surprisingly, the Czech Republic, Slovakia, and Hungary worsened their world positions, measured by Global Competitiveness, with **Poland being the only country among the 4 to improve its position slightly.** The **biggest problems** of V4 economies were identified in public sector related areas, specifically, in **tax regulations** and **bureaucracy** (World Economic Forum).

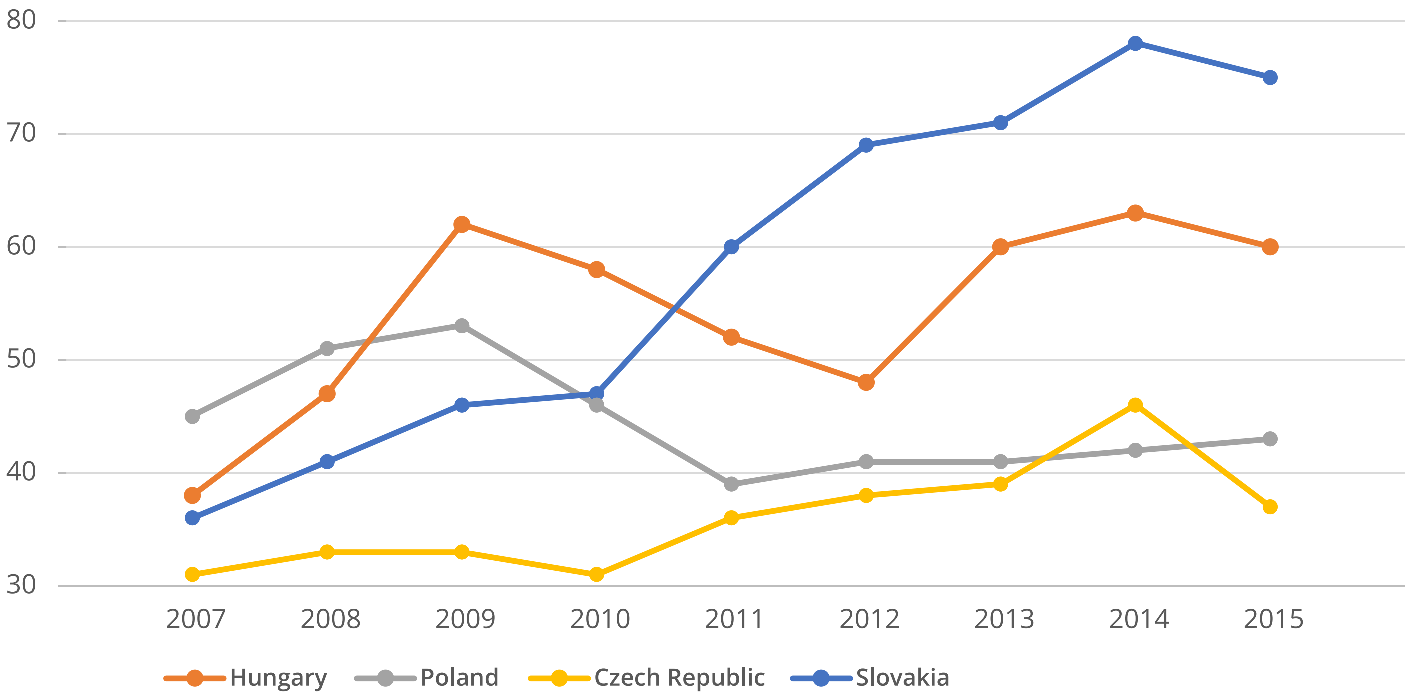
Table 2: Selected indicators representing competitiveness of V4 countries

Country	Czech Republic		Slovakia		Poland		Hungary	
Indicator								
Year	**2006-2007**	**2014-2015**	**2006-2007**	**2014-2015**	**2006-2007**	**2014-2015**	**2006-2007**	**2014-2015**
Global Competitiveness Index	**4,7**	**4,5**	**4,5**	**4,1**	**4,4**	**4,5**	**4,3**	**4,5**
Global Competitiveness Index Rank	**31**	**37**	**36**	**75**	**45**	**43**	**38**	**60**
Year	**1995**	**2015**	**1995**	**2015**	**1995**	**2015**	**1995**	**2015**
Economic Freedom Index	**67,8**	**72,5**	**60,4**	**67,2**	**50,7**	**68,6**	**55,2**	**66,8**
Year	**1998**	**2014**	**1998**	**2014**	**1998**	**2014**	**1998**	**2014**
Corruption Perceptions Index	**4,8**	**5,1**	**3,9**	**5,0**	**4,6**	**6,1**	**5,0**	**5,4**
Year	**1995**	**2012**	**1995**	**2012**	**1995**	**2012**	**1995**	**2012**
Knowledge Economy Index	**7,8**	**8,1**	**7,2**	**7,6**	**6,9**	**7,4**	**7,5**	**8,0**
Year	**1996**	**2014**	**1996**	**2014**	**1996**	**2014**	**1996**	**2014**
National Patent Office Applications per thousand of population 15-64	**0,7**	**0,2**	**0,7**	**0,1**	**0,2**	**0,2**	**0,4**	**0,1**

Source: Heritage Foundation, Transparency International, World Bank, World Economic Forum (2015)

Corruption remains a problem. Looking at the data from the Corruption Perceptions Index, it is fair to conclude that a small step was made, but it is not enough to catch up with the global leaders in law enforcement and public sector efficiency (Transparency International).

Figure 2: Global Competitiveness Index rankings over years 2006-2015

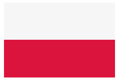


Source: Heritage Foundation, Transparency International, World Bank, World Economic Forum (2015)

The overall **competitive environment seems to be improving**. The Index of Economic Freedom reflects rapid improvements in business, labour market, and trade freedom. Following the World Economic Forum's recommendations, the V4 countries should **improve their infrastructure**, develop **better higher education** and training organizations, and **promote development of financial market and innovative behaviours**[1].

Apart from the already mentioned corruption, the most problematic factors (as reported by the World Economic Forum) include **red tape, tax regulation,** and **rates,** and **restrictive labor regulations** (Table 3).

Table 3: The most problematic factors for doing business

Czech Republic		**Slovakia**		**Poland**		**Hungary**	
							
Inefficient government bureaucracy	**18,6**	Inefficient govern-ment bureaucracy	**17**	Tax regulations	**23,2**	Policy instability	**15,1**
Corruption	**16,3**	Corruption	**16**	Restrictive labor regulations	**15,5**	Access to financing	**13,5**
Policy instability	**9,1**	Restrictive labor regu-lations	**15**	Inefficient govern-ment bureaucracy	**14,6**	Corruption	**13**
Restrictive labor regulations	**9**	Tax rates	**10**	Tax Rates	**11,2**	Tax regulations	**11**
Tax regulations	**8**	Tax regulations	**10**	Access to financing	**9,6**	Inefficient govern-ment bureaucracy	**10,3**
Inadequately educated workforce	**6,3**	Inadequate supply of infrastructure	**9,3**	Inadequate supply of infrastructure	**5,6**	Tax Rates	**10,1**
Tax Rates	**6,2**	Policy instability	**7,7**	Insufficient capacity to innovate	**4,3**	Inadequately educated workforce	**6,9**
Insufficient capacity to innovate	**5,9**	Inadequately educa-ted workforce	**6,3**	Corruption	**3,4**	Poor work ethic in national labor force	**5,8**
Access to financing	**5,8**	Access to financing	**2,8**	Policy instability	**3,3**	Insufficient capacity to innovate	**4,3**
Poor work ethic in national labor force	**3,9**	Poor work ethic in national labor force	**2**	Inadequately educated workforce	**2,7**	Inadequate supply of infrastructure	**3**

Source: World Economic Forum

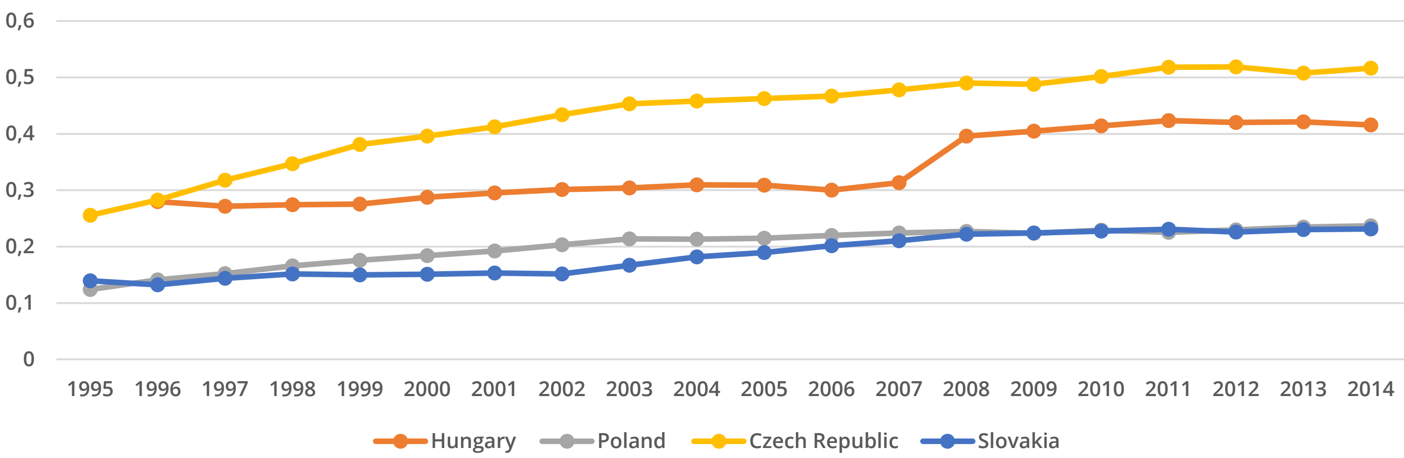
As we will argue in the following chapters, these factors, with **lacking infrastructure** and **inade-quately educated** workforce, pose serious threats to our ability to become truly innovative economies and hence, may undermine our competitive position in the future.

1 The number of patent applications dropped significantly in the V4 region after the EU accession, but rebounded after the establishment of the European patent office (according to the EUROSTAT data available).

1.2 Entrepreneurial activity

In order to capture the development of the regional business activity over time, we calculated the rate of registered business entities per economically active population[2]. From the figure below, we may see that business activity grew significantly in all V4 countries (Figure 3).

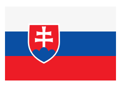
Figure 3: Registered Entities per population 15-64 during years 1996-2014



Source: Central Statistical Office of Poland, Czech Statistical Office, Hungarian Central Statistical Office, Slovak Statistical Office, World Bank

Time required to start a business is another important indicator of entrepreneurial environment and is treated as an indirect measure of bureaucracy. During the last 20 years, all V4 countries were able to **decrease the number of days required to establish a business by over 100%.** The **costs of starting-up a business venture declined**, and regulatory norms concerning minimum paid-in capital required to start-up a business venture were relaxed. Law enforcement remains a challenge, with costs related therewith remaining at 1996 levels, and in Slovakia's case, increasing over the years (World Bank).

Table 4: Selected indicators representing entrepreneurial environment in V4 countries

Country	**Czech Republic**		**Slovakia**		**Poland**		**Hungary**	
Indicator								
Year	**1996**	**2014**	**1996**	**2014**	**1996**	**2014**	**1996**	**2014**
Registered Enterprises per population 15-64	**0,3**	**0,5**	**0,1**	**0,2**	**0,1**	**0,2**	**0,3**	**0,4**
Year	**2003**	**2015**	**2003**	**2015**	**2003**	**2015**	**2003**	**2015**
Time required to start a business (days)	**40**	**15**	**103**	**12**	**56**	**30**	**52**	**5**
Year	**2005**	**2015**	**2005**	**2015**	**2005**	**2015**	**2005**	**2015**
Minimum paid-in capital required to start a business (% of income per capita)	**39**	**0**	**41**	**19**	**220**	**11**	**80**	**48**
Cost to start a business (% of income per capita)	**10**	**7**	**5**	**2**	**20**	**12**	**22**	**7**
Cost to enforce a contract (% of claim)	**33**	**33**	**26**	**30**	**19**	**19**	**15**	**15**

Source: Central Statistical Office of Poland, Czech Statistical Office, Hungarian Central Statistical Office, Slovak Statistical Office, World Bank

2 Considering all limitations coming from registered subjects, which may not always be active in economy.

Table 5: Enterprises in V4 countries in 2014 according to size, employees and value added

Country	Czech Republic		Slovakia		Poland		Hungary	
Indicator								
Number of micro enterprises/proportion	968 998	96,1%	375 780	95,8%	1 407 427	95,2%	497 947	94,5%
Number of small enterprises/proportion	31 850	3,2%	13 810	3,5%	52 676	3,6%	23 906	4,5%
Number of medium-sized enterprises/proportion	6 273	0,6%	2 213	0,6%	14 850	1,0%	4 064	0,8%
Number of SMEs/proportion	1 007 121	99,9%	391 803	99,9%	1 474 953	99,8%	525 917	99,8%
Number of large enterprises/proportion	1 406	0,1%	465	0,1%	2 940	0,2%	829	0,2%
Number of employees/proportion micro	1 132 769	32,1%	537 760	37,6%	3 007 504	36,5%	867 316	35,7%
Number of employees/proportion small	637 865	18,1%	263 387	18,4%	1 121 510	13,6%	447 932	18,4%
Number of employees/proportion medium-sized	645 056	18,6%	230 254	16,1%	1 550 098	18,8%	404 374	16,7%
Number of employees/proportion SMEs	2 424 690	68,8%	1 031 401	72,2%	5 679 112	68,8%	1 719 622	70,6%
Number of employees/proportion large	1 100 327	31,2%	397 534	27,8%	2 570 479	31,2%	708 457	29,2%
Value added billion euros/proportion micro	16	19,8%	10	29,8%	28	14,7%	9	18,5%
Value added billion euros/proportion small	12	14,5%	7	19,1%	27	14,4%	8	16,2%
Value added billion euros/proportion medium-sized	16	19,9%	6	15,8%	39	20,9%	9	19,2%
Value added billion euros/proportion SMEs	45	54,1%	23	64,6%	94	50,0%	25	53,9%
Value added billion euros/proportion large	38	45,9%	12	35,4%	94	50,0%	21	46,1%

Source: Eurostat

Of all business entities, small and medium enterprises (SMEs) are perceived as the backbone of the economy. According to the European Commission, they represent about 99% of all businesses in the EU.[3] The SMEs handle about 67% of total EU private sector employment and add over 58% value on an EU-average. These characteristics are similar in Visegrad Group, regarding all but one indicator. Except for Slovakia, the value added by SMEs is below the European average in the V4 countries.

1.3 Innovativeness

We chose several indicators to paint the picture of innovativeness in our economies. The highlighted information in Table 6 points to three main layers of innovative behaviour: the so-called **enablers** (light red) capture the main drivers of innovation performance external to the firm, the **firm activities** (light blue) capture the innovation efforts at the level of the firm, while the **outputs** (light green) capture the effects of firms' innovation activities.

According to the European Innovation Scoreboard's methodology, the V4 countries were described as **moderate innovators**. The innovation performance improved in our countries over the last 7 years, despite some fluctuations (especially for Poland, where the performance fell for 2012 and 2013 and rebounded in 2014). Most of the Visegrad Group countries are performing below the EU average for all dimensions. Poland is, particularly, weak, regarding the number of non-EU doctorate students and public-private co-publications. Hungary shares this characteristic. It also struggles to maintain the sales shares of new innovation and the number of SMEs with product or process innovations. Slovakia is relatively weak in license and patent revenues generated abroad (this indicator is down by 38%), and the non-R&D innovation expenditures are steadily declining. Czech Republic's weaknesses are its research systems and intellectual assets; however, performance has improved in these areas by 7.9% and 6.2%, respectively. A more pressing issue is a 30% decrease in venture capital investments, which might cause widening of the financing gap for innovative enterprises. Human resources are a relative strength, especially in regards to Slovakia and Czech Republic. Hungary is trying to catch up with R&D expenditures (11% growth), community trademarks (10% growth), and license and patent revenue from abroad (9.2% growth).

3 For an exact definition, please refer to: http://ec.europa.eu/growth/smes/business-friendly-environment/sme-definition/index_en.htm

The innovation efficiency ratio[4], which shows how much innovation output a country is getting for its inputs, indicates a huge disparity between the V4 countries, with Czech Republic taking the 11th spot among 141 economies, Poland being ranked at the 93rd place, and Hungary and Slovakia taking places somewhere between (35th and 48th place respectively).

Table 6: Selected indicators representing innovativeness in V4

	EU AVERAGE	PL	CZ	SK	HU
Current performance (2007-2014 growth rates)					
Innovation Efficiency Ratio	-	0,66 (93rd)	0,89 (11th)	0,76 (48th)	0,78 (35th)
Gross Domestic Expenditure on R&D = GERD (% 2014 GDP)	2.03	0.94	2	0.89	1.38
New doctorate graduates per 1000 population aged 25-34*	1.8 (2.6%)	0.6(-7%)	1.7 (6.4%)	2.4 (10.4%)	0.9 (3.7%)
Scientific publications among the top-10% most cited publications worldwide as % of total scientific publications of the country	11 (1.5%)	3.8 (3.2%)	5.6 (4.6%)	4.2 (6.7%)	5.3 (1.5%)
Non-EU doctorate students as a % of all doctorate students	25.5 (3.5%)	1.9 (-4.4%)	4.4 (4.3%)	1.5 (14.4%)	3 (-1.1%)
R&D expenditure in the public sector (% GDP)	0.72 (1.9%)	0.48 (3.8%)	0.87 (8.2%)	0.44 (7.2%)	0.41 (-2.5%)
Number of public-private co-authored research publications	50.3 (2.3%)	4.7 (8.7%)	25.1 (7.9%)	13.7 (8.7%)	26.8 (3.1%)
R&D expenditure in the business sector (% GDP)	1.29 (1.9%)	0.38 (12.2%)	1.03 (4.8%)	0.38 (8.8%)	0.98 (10.7%)
SME introducing product or process innovations (% of SMEs)	30.6 (-1.7%)	13.1 (-6.2%)	30.9 (-0.5%)	17.7 (-2.7%)	12.8 (-3.8%)
Employment in fast-growing enterprises in innovative sectors (% of total employment)	17.9 (0.5%)	19.3 (1.6%)	18.7 (1.9%)	19.2 (-0.1%)	19.1 (0.7%)
Employment in knowledge intensive activities (% of total employment)	13.8 (0.6%)	9.6 (0.9%)	12.9 (2.0%)	9.6 (-0.7%)	12.8 (0%)
Exports of medium and high-technology products as a share of total product exports	53 (-0.8%)	56.6 (-0.2%)	62.5 (0.2%)	63.6 (1.6%)	66.3 (-1.1%)
Knowledge-intensive services exports as % of total services exports	49.5 (0.7%)	26.6 (3.3%)	35.2 (-0.9%)	31.3 (9.2%)	28.8 (3.3%)
Cultural & creative services exports as % of total exports	-	1	0.6	0.4	1.5
Creative goods exports as % of total trade	-	3.9	10.1	10.5	6.2

** The average annual growth rates were calculated with a following formula: AAGR= ((Value end of period)/(Value beginning of period))^((1/(Number of years))-1 where the number of years = 7*
Source: European Commission, Eurostat, Global Innovation Index

The V4 countries are moving up the ladder of the Bloomberg Innovation Index ("BII"). The BII assesses a country's innovativeness by measuring its R&D intensity[5], manufacturing value-added[6], High-tech density[7], tertiary efficiency[8], research personnel[9], and patents[10]. The Global Innovation Index also ranks the V4 economies among the top 50 innovative countries in the world.

One area in which we had the worst results were so-called "innovation linkages", depicting, among others, university/industry research collaboration and the state of cluster development in a country. Poland was the worst (102 out of 141 countries), while Hungary (83rd), Slovakia (69th), and Czech Republic (53rd) also have room for improvement. R&D does little good if it stays bottled up in the laboratory.

4 A ratio of the so-called Output Sub-Index score (provides information about outputs that are the results of innovative activities within the economy) over the Input Sub-Index score (is comprised of 5 input pillars that capture elements of national economy that enable innovative activities: institutions, human capital and research, infrastructure, market and business sophistication.

5 R&D expenditure as % GDP.

6 Measured as % GDP per capita.

7 Number of domestically domiciled high-tech public companies as a share of world's total high-tech public companies.

8 Total enrolment in tertiary education, regardless of age, as % the post-secondary cohort, % labor force with tertiary degrees, annual new science and engineering graduates as % total tertiary graduates and as % total workforce.

9 Professionals, including PH.D. students, engaged in R&D per 1mn population.

10 Resident patent filings per 1 mn population and per $100bn GDP, patent grants as a share of world total.

Table 7: Innovation indices

	POLAND	CZECH REPUBLIC	SLOVAKIA	HUNGARY
BLOOMBER INNOVATION INDEX 2016	23RD	31ST	39TH	30TH
GLOBAL INNOVATION INDEX 2015	46TH	24TH	35TH	36TH

Source: Bloomberg Innovation Index, Global Innovation Index, Cornell University (2015)

Conclusions

During the past 25 years, all V4 economies have gone through radical changes aimed to transform them into democratic, free market economies. Based on the statistical data presented above, it is fair to say that, on average, our societies are healthier, richer, and more educated. However, in assessing a country's prospects, one should not only look at rankings. A recent example of their misleading nature has been Egypt. In 2008, Egypt was ranked as the top reformer in the World Bank's Doing Business ranking. The country was praised for slashing the minimum capital requirements for companies and halving start-up time and cost. However, many of these reforms remain largely only on paper, with minimal contribution to living conditions of ordinary Egyptians. Having said this, we acknowledge the problems our economies are struggling with (especially the lack of governmental efficiency, regulatory burdens, and taxation), but our focus is on the ideas and solutions that might further contribute to the attractiveness of our region.

List of References

- Central Statistical Office of Poland. 2015. Database.
  [ONLINE] Available http://stat.gov.pl/en/databases/. [Accessed 09 December 15].
- Czech Statistical Office. 2015. Time Series Database.
  [ONLINE] Available https://www.czso.cz/csu/xa/casove_rady. [Accessed 09 December 15].
- Eurostat. 2015. European Statistics.
  [ONLINE] Available at: http://ec.europa.eu/eurostat. [Accessed 09 December 15].
- Bloomberg 2015. Bloomberg Innovation Index.
  [ONLINE] Available at: https://www.globalinnovationindex.org/content/page/gii-full-report-2015/. [Accessed 09 December 15].
- Global Innovation Index, Cornell University 2015. Global Innovation Index.
  [ONLINE] Available at: https://www.globalinnovationindex.org/content/page/gii-full-report-2015/. [Accessed 09 December 15].
- European Commission. 2015. European Innovation Scoreboards.
  [ONLINE] Available at: http://ec.europa.eu/growth/industry/innovation/facts-figures/scoreboards/index_en.htm. [Accessed 09 December 15].
- Euromonitor. 2015. Passport Database.
  [ONLINE] Available at: http://www.transparency.org/research/cpi/overview. [Accessed 09 December 15].
- Heritage Foundation. 2015. Economic Freedom Index.
  [ONLINE] Available at: http://www.heritage.org/index/. [Accessed 09 December 15].
- Hungarian Central Statistical Office. 2015. Database.
  [ONLINE] Available https://www.ksh.hu/?lang=en. [Accessed 09 December 15].
- Slovak Statistical Office. 2015. Entities of the Economy.
  [ONLINE] Available at:http://www.statistics.sk/pls/elisw/casovy_Rad.procDlg. [Accessed 09 December 15].
- Transparency International. 2015. Corruption Perceptions Index.
  [ONLINE] Available at: http://www.transparency.org/research/cpi/overview. [Accessed 09 December 15].
- World Bank. 2015. DataBank.
  [ONLINE] Available at: http://databank.worldbank.org/data. [Accessed 09 December 15].
- World Economic Forum. 2015. Global Competitiveness Index.
  [ONLINE] Available at: http://reports.weforum.org/global-competitiveness-report-2014-2015/downloads/. [Accessed 09 December 15].

2. THE FUTURE OF FINANCE

Damian Polok, Sebastian Wieczorek, Dominik Keil, Zsombor Incze

2.1 Executive Summary

A stable financial system is crucial for the success of any economy. Looking at the future of V4, without doubt, the expanding economies will also require larger and more sophisticated access to finance. For this progress it is necessary to create an appropriate macroeconomic framework that would appeal to short- and to long-term investors. This framework should be characterized by prudent fiscal and monetary policy, appropriate and predictable legal and political framework, and a pro-investing political climate. With an overall positive environment for capital markets, Visegrad would benefit in the long-term.

1. **Create a long-term V4+ capital market development plan.** In order to promote development of our fragmented capital markets, our countries should engage in strategic partnerships and collaborate to increase the attractiveness of the region. Capital markets and stock exchanges increasingly focus on cross-border integration. Successful examples show that long-term development plans engage strategic partnerships of the financial eco-system as a whole. To create a deep and liquid capital market, governments, stock exchanges, regulators, and market participants of our region have to cooperate to create a long-term investment-friendly framework, which would direct to an advancing synchronisation and integration – possibly to the point to create a single capital market.

2. **Put capital markets in a central role.** The financial sector in Europe is bank centric. Companies from our region should attract long-term financing of their expansionary and innovative activities. For a long-term development strategy, it will become crucial to develop well-functioning capital markets, which will enhance the funding-mix of the economy, give access to capital to innovative companies and attract other market participants, which will find better opportunities to invest and disinvest, like Private Equity funds. Companies from our region should have the opportunity to attract long-term financing of their expansionary and innovative activities. A clear commitment towards capital market financing, including alternative sources of finance, of our governments is inevitable.

3. **Increase role of domestic capital by deepening the local investor base.** V4's capital markets are bank dominated. Compared to developed capital markets, investment and pension funds and other (institutional) financial service providers play a minor role. Regulatory frameworks shall be constructed to encourage local investments in capital markets, rather than discourage, like the reversal reforms of private pension funds in Hungary and Poland. Additionally, V4's banking sectors are dominated by foreign banks. We believe with increasing development of the economy, the banking sectors will also resemble the banking structure of more developed economies to a much higher extent. This includes a higher ownership of the banking system by local capital.

4. **Increase diversification of sources of funding.** By expanding the role of the capital market, regulators should enable diversified sources for investments. It is important to allow for products that in other, more developed capital markets are used and give fuel for the realisation of needed investments. REITS, securitisation or Islamic Finance, as examples, have so far not been implemented across the whole of V4, yet could be another step towards increased synchronisation of the capital markets and improved reputation in the eyes international investors. The increased attractiveness of the region would in consequence lead to expanded fields of activity for domestic investors as well, as increased market activity reinforces further activity benefiting from improved liquidity,

2.2 Stability of the financial sectors in V4 key to further economic development

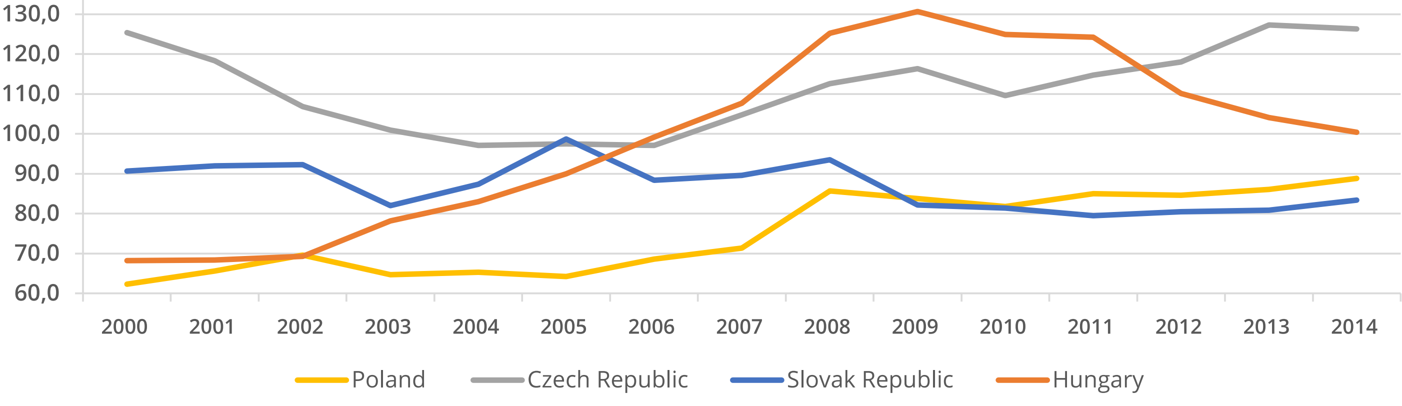
The financial crisis exposed financial instability in the international economy, causing the biggest collapse since the Great Recession. The crisis that broke out in the United States' housing market in mid-2007 rapidly expanded to other sectors of the economy, starting a domino effect[11].

Since 2007, major central banks, fearing a repetition of the 30s' scenario, have provided liquidity support to the market and in parallel cut interest rates, with aim of increasing market liquidity. In many countries, including the Euro area, governments started to recapitalize banks, which led to rapid growth of budget deficits and public debt. Existing financial institution were perceived as "too big to fail" (the assets of top 10 banks dubbed most of other euro zone GDPs) soared countries debt causing recession[12]. However, compared to its Western European peers the Visegrad Group experienced a smaller recession, with Poland being Europe's 'green island' with no recession.

While the first phase of the crisis (2007-09) was similar in all developed countries, in years following, some differences between the Europe and the United States became visible[13]. One reason was that crisis undermines weakness of one currency regime. In case of Europe, this resulted in the Euro's three crisis dimensions: 1) banking; 2) sovereign debt; and 3) growth and competitiveness[14]. In the second half of 2014, The Economist called America's economy "The lonely locomotive" in terms of recovering and growth. Additionally, in December 2015, the Federal Reserve raised rates for first time since 2006, which only confirmed the good condition of the US economy. At the same time, the European Central Bank tried to expand its unconventional monetary tools for example the Securities Market Programme and Covered Bond Purchase Programme to support the slender GDP growth.

The V4 countries should take lessons from this experience and revise some of their pre-crisis assumptions, especially pre-existing paradigms of the financial sector and the economy. Before the crisis, many economists (e.g., Ross Levine) thought extensively large financial systems spur economic growth. Some analysis conducted after 2008 suggest there is a threshold above which financial depth no longer has a positive effect on economic growth[15]. Empirical approaches show that financial depth has a negative impact on output growth when credit to the private sector reaches 100% of GDP.

Figure 1: Total assets, EUR mn in % of GDP



Source: Raiffeisen Research, NBP, MNB, CNB, NBS, 2015

Other research showed that Europe is overbanked because of enormously large banks, too much banking credit to GDP, and excessive dependence on banks' lending to the economy[16]. That holds especially true for the countries of V4, as their underdeveloped capital markets constitute, by far less, to the funding mix of their economies than their Western European peers.

11 F. S. Mishkin, Over The Cliff: From the Subprime to the Global Financial Crisis, NBER Working Paper Series, 2010

12 IMF (2009) IMF lowers estimate of *losses* from *global* financial *crisis* and economic *crisis* to *3.4 trillion* US in mid-2007 to 2010. http://www.globaltimes.cn/content/473710.shtml

13 T. Hoshi, A. K. Kashyap, Will the U.S. and Europe Avoid a Lost Decade? Lessons from Japan's Post Crisis Experience, 2014

14 J. C. Shambaugh, The Euro's Three Crises, Brookings Papers on Economic Activity, 2012

15 J. L. Arcand, E. Berkes, U. Panizza, Too much finance?, J Econ Growth, 2015

16 Is Europe Overbanked, report written by a group of the ESRB's Advisory Scientific Committee chaired by Marco Pagano, No. 4/June 2014

- Another existing pre-crisis assumption was that the dominance of banks controlled by foreign banking groups in the post-socialist countries is beneficial to their economic development. We should note that banks being part of international groups look at a country's performance, but also their own financial situation, which can cause a negative impact on domestic banks' functioning. This was illustrated during the financial crisis when banks controlled by foreign groups limited corporate credit in comparison with domestic banks[17].
- The subsequent paragraphs discuss the optimal banking sector structure and its potential influence on V4 economies, the importance of alternative forms of financing and their imminent influence on the future of our economies, as well as the role, development, and future of stock exchanges as foundation for deep capital markets.

2.3 Towards an appropriate regulatory framework

The last decades have changed the structure and operations of the financial system, stimulated by significant improvements in technology, rapid product innovation, and ongoing integration of the global financial system. This new environment led to appearance of more sophisticated services and products, which were cornerstones of the global financial crisis[18]. Pre-crisis regulations didn't fit sudden changes that, combined with lack of cooperation between different authorities, led to financial instability. Nowadays, many regulatory initiatives have reshaped the rules that oversee the financial system and systemic important financial institutions[19].

A well designed and appropriate legal framework is one of the key fundaments in developing sound and vibrant capital markets. Hence regulators in V4 should follow global best practices, even if their economies, based on their size and level of development, have been less vulnerable to shocks. At the same time our region faces other challenges, like high reliance on foreign capital, hence foreign exchange rate risk, underdeveloped market infrastructure, small investor base combined with marginal liquidity. On one hand, policy makers should remember the continuous changing environment and try to adopt new regulations, but on the other hand, current supervision should be more business friendly. We live in the era of start-ups and growing "alternatives of everything" – financing method (crowdfunding), payment methods (in which FinTech largely contributed), sales channel (mobile devices), communication (online), and this is only part of the current business solution. Regulators should be close to business and include new forms of activities to support them, but also protect consumers. Supervisors and regulators should be guided by a risk-based supervision approach rather than 'blanket regulation', which aims at reducing systemic risk rather preventing individual failures[20].

Nowadays, capital and labour force are mobile, and there are no contraindications to operate in almost every corner of the world. For all of the Visegrad countries, this situation is an opportunity, but also a potential risk. One of the major resources in our countries are the educated and creative people we have full of ideas. However when pursuing their ideas they often face bureaucracy, complicated tax regulation, high business burdens, unsupportive regulatory framework which causes the best ideas leaving our region. In the next 25 years, V4 countries should implement new regulations to enhance business and innovation growth, and at the same time protect the final consumer. This close-relationship with the business sector can lead us not only to keep current ideas in our countries, but also to attract foreign innovators and capital.

2.4 How should the banking sectors of V4 look?

Stable banks are the foundation for successful economic development of our countries. Especially after the financial crisis, it is important to assess the structure of our banking sectors.

17 Report on the optimal structure of the Polish banking system in the mid-term, Capital Strategy, 2012
18 Policy Framework for Effective and Efficient Financial Regulation, OECD 2010
19 Key Aspects of Macroprudential Policy, IMF, 2013
20 Dudley, William C. and Hubbard, R. Glenn (2004); How Capital Mark Enhance Economic Performance and Facilitate Job Creation; Global Markets Institute Goldman Sachs; New York

The basic measure we used to approach the banking market structure was the standardized Herfindahl-Hirschmann Index (HHI), ranging from 0 to 1 (where a value close to one means a monopolistic or at least oligopolistic market structure).

Figure 2: Herfindahl-Hirschmann Index for the Credit Institutions of the V4 countries. Source: ECB data, own visualization.

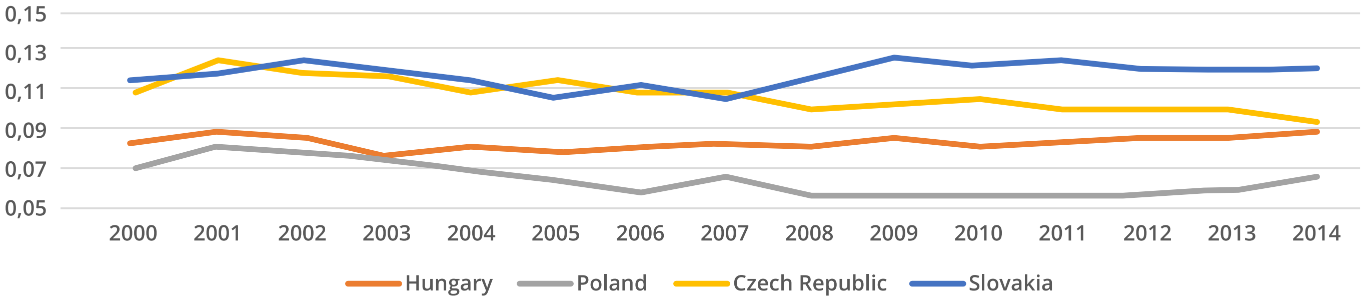
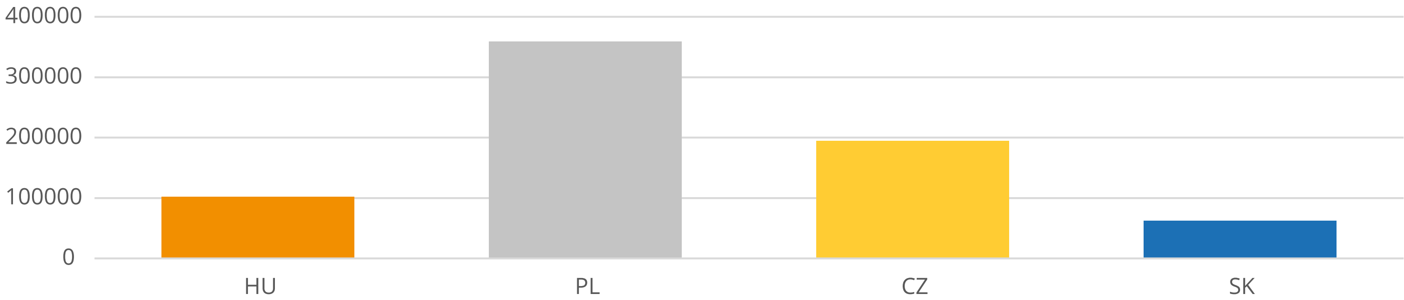
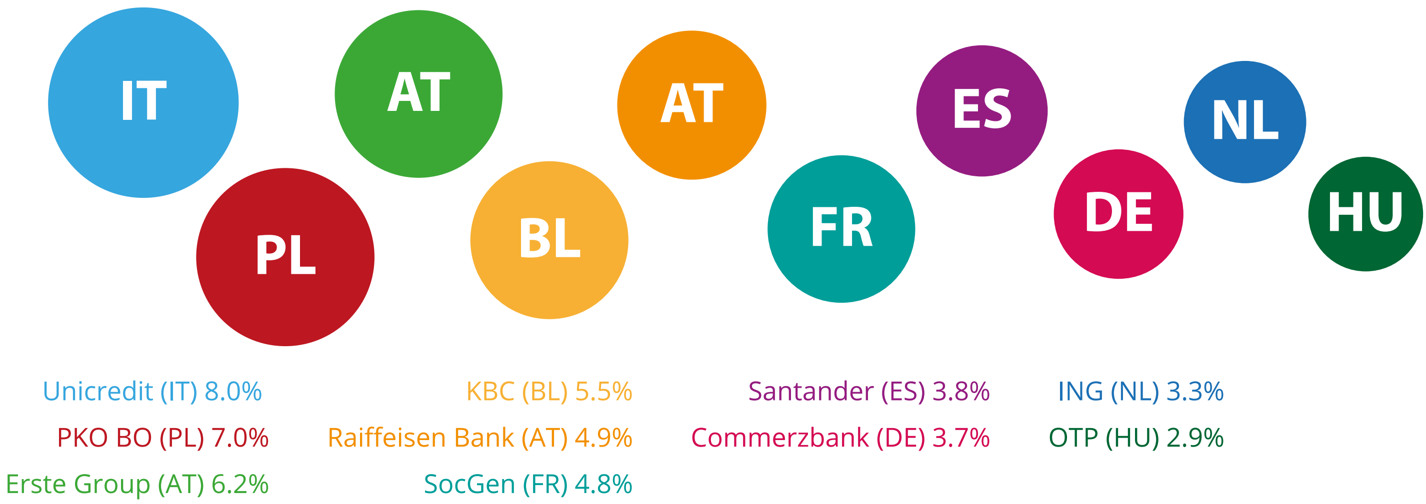


Figure 3: Total assets of the credit institutions in the V4 countries, m EUR., 2014 Source: Raiffeisen Research, 2015



Historically, Slovakia has been characterized by the highest market concentration, which is fair enough, given that Slovakia is the smallest country by market size. On the opposite, Poland has had the lowest HHI. Since 2000, the market concentration in the Czech Republic has been slowly decreasing, while in Hungary, it stayed almost at the same level with some minor changes.

Figure 4: Market Shares 2014 V4 in % of total assets, 2014



According to Raiffeisen Research (2015), UniCredit has the highest market share (by asset size) in the region. Second biggest participant is PKO BP. Apart from PKO, only OTP Bank could get in to the TOP 10 from the region; all other banks originate from outside the region. This creates a unique banking environment, where most lenders are owned and controlled by Western European banks.

In such an environment , this ownership structure contributes to higher lending activity, because these institutions can receive funding from intra-group capital markets, thus, from their parent companies. Jeon et al. (2011) pointed out that foreign banks increase competition. This clearly seems to be the case in the Czech Republic and Poland, where a clear trend of decreasing market concentration is to be marked out with the countries' deeper European integration. On the other hand, Hungary and, especially, Slovakia do not confirm this finding.

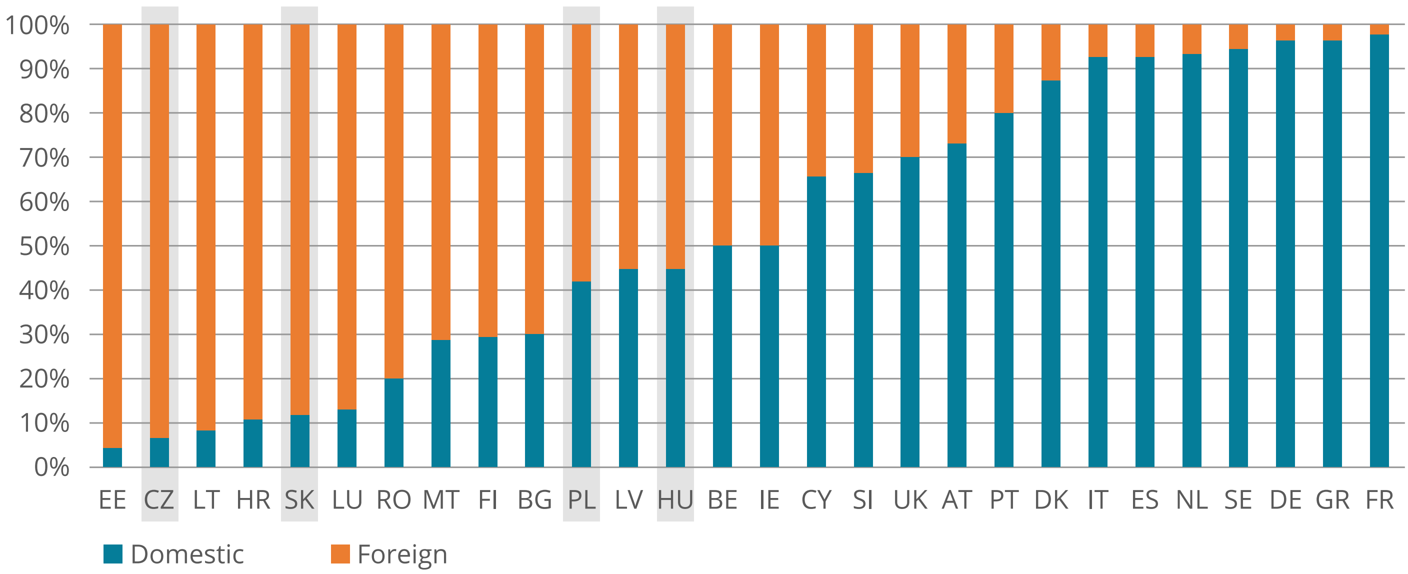
Due to length limitations on this report, some other findings in the literature cannot be tested here, although might serve as a basis for further research. These include (1) foreign banks are more profitable in less developed countries (Chen & Liao 2011); (2) foreign banks are less responsive to domestic monetary shocks, which undermines the effectiveness of the bank lending channel of the monetary policy (Wu et al. 2011); and (3) foreign banks played a significant role in spreading the contagion during 2007-09 financial crisis (Cetorelli & Goldberg 2010).

2.4.1 Optimal bank ownership structure

In Hungary, there has been a recent move towards creating a more domestically controlled banking sector. This example is announced to be followed by the Polish government, as well, meaning the economic policy in these countries believes a domestically controlled banking sector is "optimal."

Figure xx.xx shows the bank ownership structure divided between foreign and domestic owners for each EU member states by H1 2014. Out of the V4 countries, the Czech Republic has the smallest domestic ownership of about 7%, and Hungary has the highest, ranging up to 45% by then; moreover, due to recent government transactions, this ratio has reached 55%.[21]

Figure 5: Bank ownership structure in the EU member states, H1 2014, based on total bank assets.



Source: ECB https://www.ecb.europa.eu/stats/money/consolidated/html/index.en.html own visualization.

All Eastern-European countries displayed above are characterized by predominantly foreign-owned banking sectors - while for Western European countries with a longer history of capitalism, the structure can be described as antithetic, as foreign banks play a marginal role.

Although we do not like to prioritize any ownership structure model over another, there are clear advantages and disadvantages each form implies. The most important advantages of foreign owned banks for the host countries are: (1) in the upside part of the business cycle they lend more, having more funding granted by their parent institutions (Aydin 2008); (2) they increase competition (Jeon et al. 2011); and (3) transfer their risk management and contract execution expertise, which is important for countries with underdeveloped institutions. Disadvantages include: (1) in the upside part of the business cycle, it strengthens the competition based on excessive risk-taking; (2) in the downside part of the business cycle, they decrease lending by an extent larger than their domestic competitors (Aiyar 2011; Cetorelli & Goldberg 2010) and have a tendency toward 'cream-skimming' or 'cherry-picking', hence decreasing overall lending exposure (Bruno and Hauswald 2012).

21 http://www.portfolio.hu/finanszirozas/bankok/bankok_magyar_kezben_ket_lepesben_teljesult_orban_alma.220294.html

Figure xx.xx also indicates that the more developed EU members have a larger domestic ownership rate of banks. A few exceptions include Finland or Greece. Looking at only the V4 countries, it is to be noticed those with higher GDP/capita (Czech Republic, Slovakia) have lower domestic bank ownership ratios, while those with lower GDP/capita (Hungary, Poland) have higher domestic bank ownership ratios. We assume there is an inflexion point in development, until which a more dominant foreign bank ownership is desirable, but after which a dominant domestic bank ownership becomes inevitable for further growth.

As a result, eventually, all V4 countries should, somehow, orientate into the direction of a domestically controlled banking sector. However, following the "Hungarian model" introduced in the aftermath of the financial crisis, with the state buying banks from foreign owners, should be avoided, as the introduced policies were very costly and being not market friendly they created an uncertain business environment which in our opinion contributed to a lower growth as compared to the other V4 countries.

The special role of state owned banks

Given the increasing penetration of state owned banks in the region (especially in Hungary), we believe in the importance of looking at what anomalies this might cause on the market, if any.

State owned banks lend less pro-cyclical, which is less effective in their risk assessment, on the one hand; on the other, it is a supportive factor during economic downturn (Claessens and van Horen, 2012). Dinç (2005) examined the influence of political decisions on state-owned banks in emerging markets. The dataset he used includes our countries classified as emerging markets, although it misses Slovakia. He shows that governmental control over banks causes an increase in lending in election years, later confirmed by (Micco et al. 2007) . This anomaly is not visible in developed countries (Dinç 2005; Micco et al. 2007). State owned banks also charge lower interest rates (Sapienza 2004). This causes state owned banks in developing countries to be less profitable. (Micco et al. 2007)

Moreover, banks controlled by the government are less responsive to the monetary policy, since they can counteract and raise additional funding, even in a restrictive monetary environment. The greater state ownership in the banking sector causes the monetary tightening to have less impact on the level of loan supply (Andries & Billon 2010).

In our view therefore state ownership in the commercial banking sector is something to be avoided, unless the state banks perform in a dedicated niche market to support certain policies, like e.g. eco-friendly building.

2.4.2 Banking sector stability

The banking sectors in the Visegrad Group display not only a drastic difference to Western European mature markets in foreign ownership ratios, but also in other key indicators. Except for Hungary, in the years after the financial crisis, where the government introduced several policies threatening the banking sector's profitability, like the extraordinary high bank tax or CHF- compensation programmes, Visegrad's banking sectors are characterised by a high profitability. With return on equity ratios over 10-15%, many banks in the region usually outperform the profitability of Western banks, including their parent banks (Raiffeisen Research, 2015). It is also important to highlight that the high level of returns is not achieved on the expense of the liquidity of capitalisation of the sector of our region. Banks and local regulators emphasised the importance of a secure capitalisation of the banks, mirrored in the high capital adequacy ratio (CAR). The ratio describes the capability of banks to absorb reasonable amounts of loss with their capital and is being used by financial supervisory authorities to steer capital requirements of banks. A basic point of reference are the Basel III requirements, which require a minimum CAR of 10.5% (including a conservation buffer). As seen from the table below, the banking sectors of all four countries were sufficiently equipped with capital at any of the chosen points of reference, which is another good indicator for the financial stability of the sectors. Interestingly, Hungary also displays high capital adequacy ratios, which are based recapitalisations of foreign subsidiaries through their parents, governmental acquisitions of less financially potent banks, and deleveraging trends of the last years.

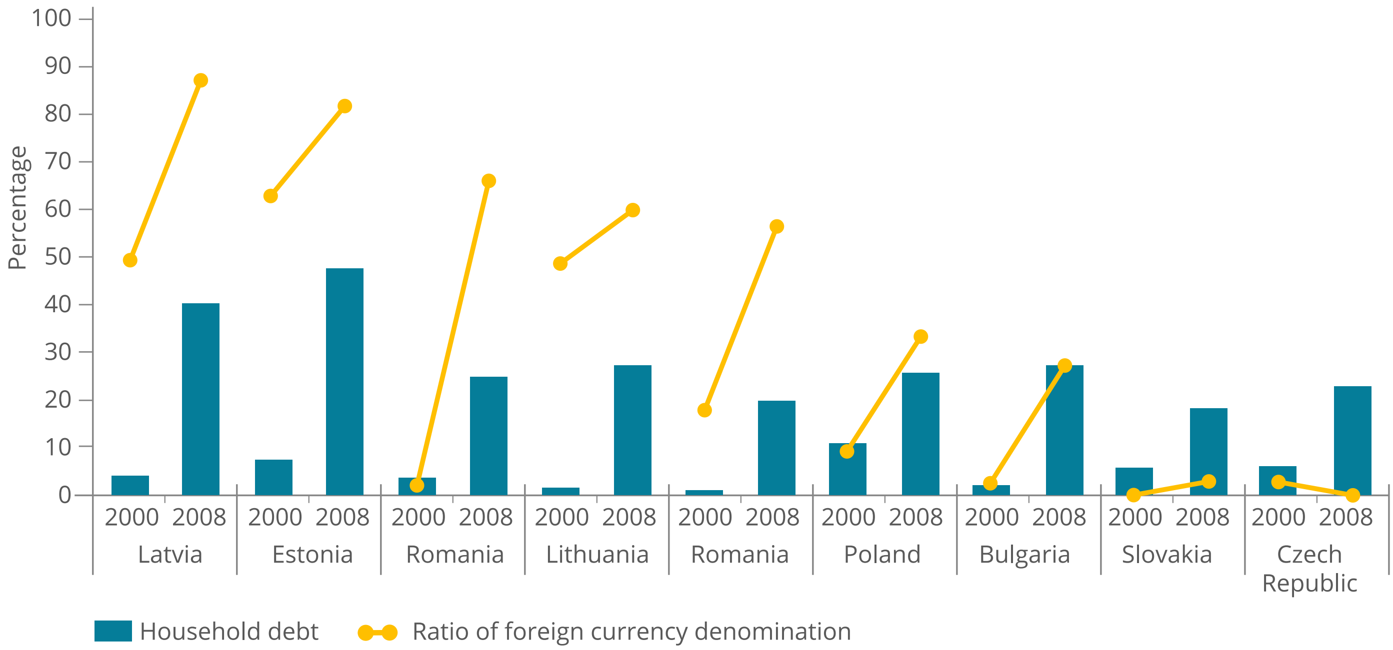
Country	**Czech Republic**			**Slovakia**			**Poland**			**Hungary**		
Indicator												
Year	2004	2010	2014	2004	2010	2014	2004	2010	2014	2004	2010	2014
Total assets, EUR mio	86,709.6	173,191	194,677	30,023.6	54,695	62,742	141,889.9	292,755.0	359,502	68,280	121,268	101,652
Total assets, in % of GDP	97.1	109.6	126.3	87.4	81.4	83.4	65.3	81.8	88.8	83	124	100.4
Total loans (% of total deposits)	167.3	78	77	188	84	91	126.4	**113**	105	96.1	140	107
Return on Assets (RoA)	1.3	1.3	1.2	1.2	0.9	0.9	1.4	0.9	1.1	2.2	0.2	-1.3
Return on Equity (RoE)	24	22.5	17	13.5	12.3	10.3	18	13.7	12	26.5	2.3	-13.2
Capital adequacy, in % of risk weighted assets	13	15.5	18	19	12.7	17.4	16	13.7	15	11.8	13.3	17
Classified loans, in % of total credits	11	6.5	6	4.6	6.1	5.4	16	7.8	8	1.9	7.8	13.3

Visegrad's banking sectors display healthy sources of funding of their loan exposure. With Hungary, Poland and Slovakia, having loan to deposit ratios of around 100%, and the Czech Republic even significantly below 100%, loans are congruently funded mostly by deposits. This means banks can count on a cheap and stable source of domestic funding, instead of riskier and volatile foreign funding.

2.4.3 Foreign currency debt issue in the V4 countries

In our region, foreign currency (mainly CHF and EUR) mortgages became more and more popular in the mid-2000s, especially in the Baltic countries and Hungary. As shown on Figure xx, of the V4, Poland was also affected, having a penetration of about 30%, while in Slovakia and the Czech Republic, foreign currency denominated debt stayed insignificant.

Figure 6: Household debt in the percentage of GDP plus the ratio of foreign currency debt to all household debt. Source:(Hudecz 2012, p.353), own translation



In Hungary, the main reason for the significant spread of foreign currency denominated debt was the conditions of the state-funded home buying support program became tighter (Hudecz 2012; Balás & Nagy 2010; Bethlendi et al. 2005), so homebuyers had to turn somewhere else for funding. Not only mortgages, but car-loans and home-equity loans, were also sold in foreign currencies. The positive attitude towards foreign currency borrowing was fuelled by borrowers' conviction of Hungary's rapid Eurozone accession. In Poland, foreign-currency borrowers were urban middle-income families benefiting from lower interest rates, hence, higher borrowing capacities for mortgage loans. The problem, therefore, was less pronounced compared to Hungary.

Although foreign currency debt looked fairly favourably at first, Berlinger & Walter (2013) identified that net income, interest rate, and exchange rates can significantly change both the debt service burden and the loan/collateral ratio. They argue an increase of the first reduces the repayment capability, while the second reduces the willingness to repay. Due to the adverse changes in all three factors, both the willingness and the capability to repay of the borrowers decreased significantly. Both factors, combined with Hungary's economic slowdown, led to high risk for Hungary's overall stability, and the imposed solutions had a drastic influence on Hungary's banking sector.

2.4.4 Recommendations

Maintain stability of banking sectors

Concluding from the basic indicators of financial stability, Visegrad's banking sectors can be characterised as profitable, well-capitalised, and regulated banking sectors, which enhances, among others, their financial stability. Given the essential capital-extensive investments in infrastructure and innovations that still lay ahead of us, financial stability is key to the further advancement of our economies. Our governments should, therefore, consider a stable and supportive environment for the banking sectors as prerequisite of economic policies.

Increase share of domestic ownership

Poland's well-diversified banking sector finds appreciation from various sources, i.e., the IMF. However, looking at foreign and domestic ownership ratios across other EU-countries, the more developed EU members have domestically controlled banking markets. Our countries need foreign capital to grow, yet at some point, the independence in decision making might be worth more than the capital to enhance further economic development. We believe, with the advancing development of our economies, the structures of our banking sectors should increasingly resemble the structure of more mature markets.

Therefore, our main recommendation is, eventually, the V4 countries will enlarge the domestic control (ownership) over the banking sector. It has to be pointed out, this will not imply the step-in of the state as an owner, and due to many negative consequences it may cause the market. Possible owners should, therefore, be mutual funds, pension funds, other domestically controlled common investment vehicles, and retail investors.

2.5 Alternative sources of funding

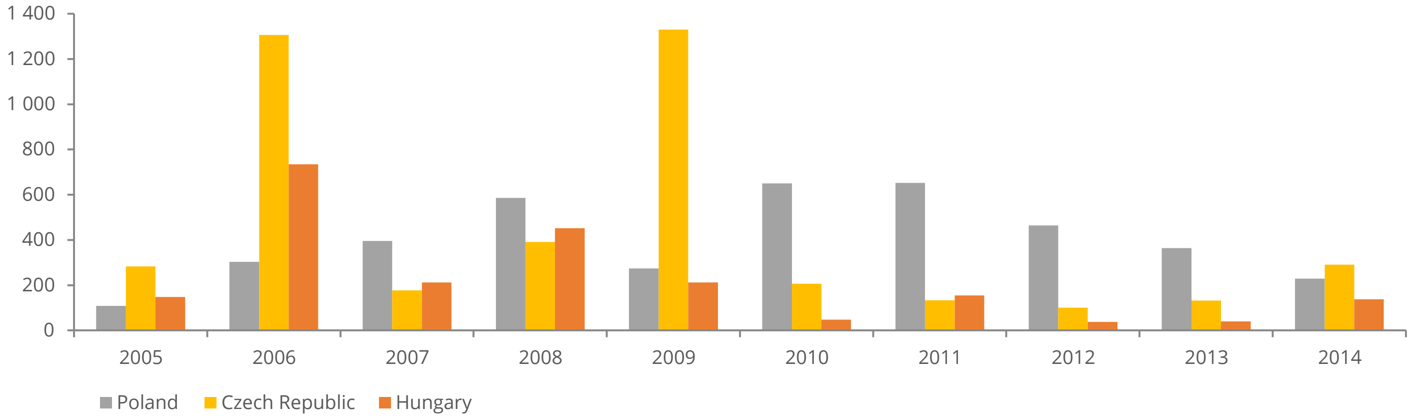
In modern economies, Private Equity is the third most important source of capital for enterprises, after the banking sector and public stock exchanges. In fact, Private Equity is a combination of features of both: it offers equity capital – just as public offers on the stock market, but the funds are provided for a limited period – comparable to bank credit and bond offerings. Private Equity provides a unique feature in the form of the know-how of their management, who often are experts in creating value in investee companies. This value creation is a win-win situation for the Private Equity fund with its investors and for the economic environment in which the business operates, leading to increased value for the economy.

Private Equity capital entered the Visegrad Group after the collapse of communism in 1989-1990. Due to the high risk perception of these markets among investors and the institutional uncertainty, the first investments were backed by institutions, such as U.S. Congress, EBRD, and IFC. In subsequent years, the first fully commercial funds appeared, lured with decent returns made by first entrants. It is worth stressing that, initially, the PE markets in all the V4 countries were driven by privatization of state-owned companies, which usually were sold at bargain price, yet comprehended significant growth potential. Due to low investments and respective low accessibility of reliable data for Slovakia, the below chapter will focus on the remaining V3.[22]

2.5.1 Recent development of the PE sectors

The accession of the V4 countries into the European Union in 2004 ignited a tremendous increase in the level of activity of Private Equity funds in the region. The surge in values of realized transactions was mainly affected by the entrance of global funds operating from outside the region, which often realized single transactions, but on an unprecedented scale. Global funds were joined by pan-regional players, who raised larger funds and took their stake in the most sizeable transactions.

Figure 7: Value of annual investments of Private Equity funds between 2005 and 2014 in EUR million

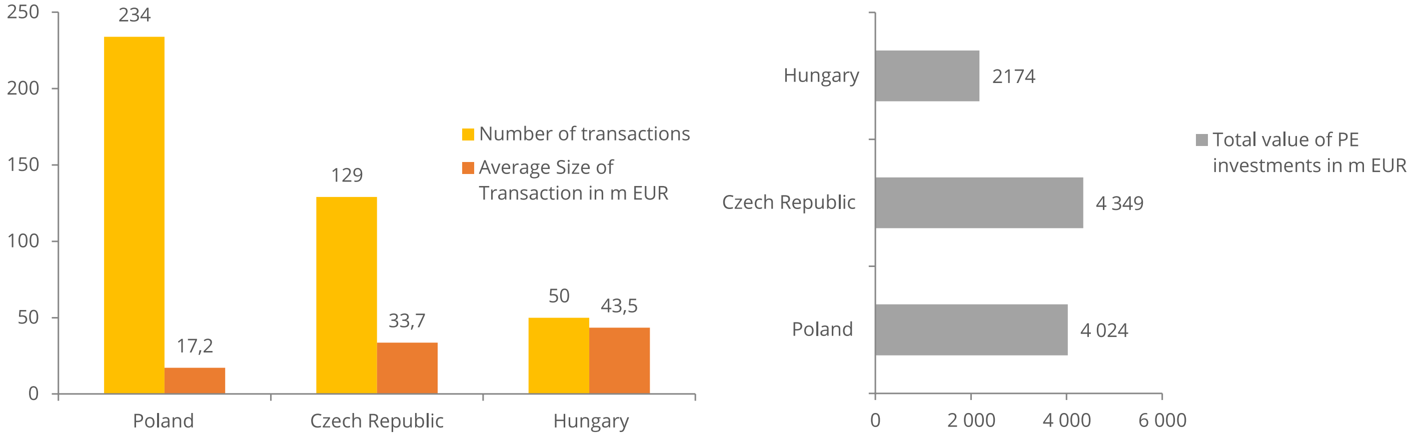


Source: Own calculations based on data provided by EVCA

From 2005 to 2014, Private Equity investments reached 4bn EUR in Poland, 4.3bn EUR in Czech Republic, and 2.2bn EUR in Hungary. Even though the Czech market is largest in terms of value, roughly half of this number was generated by the two most sizeable transactions, exceeding 1bn EUR each. It is easy to observe that the peak time for both, the Czech and Hungarian markets, was between 2006 and 2009, when large buy-out transactions took place. After that, the market shrank, hitting the bottom line in 2012. The investment cycle in the Polish market was delayed, where the peak was recorded between 2010 and 2011, and after that, the market dried out.

22 Whole paragraph based on: Jez, V., 2010, 'Private Equity & Venture Capital in the Czech Republic', Czech Private Equity & Venture Capital Association, Prague; Judit, K., 2005, 'The Development of The Venture Capital and Private Equity Industry in Hungary 1989-2004', Hungarian Venture Capital Association, Budapest Klonowski, D., 2011, 'Private Equity in Poland', Palgrave Macmillan, New York;

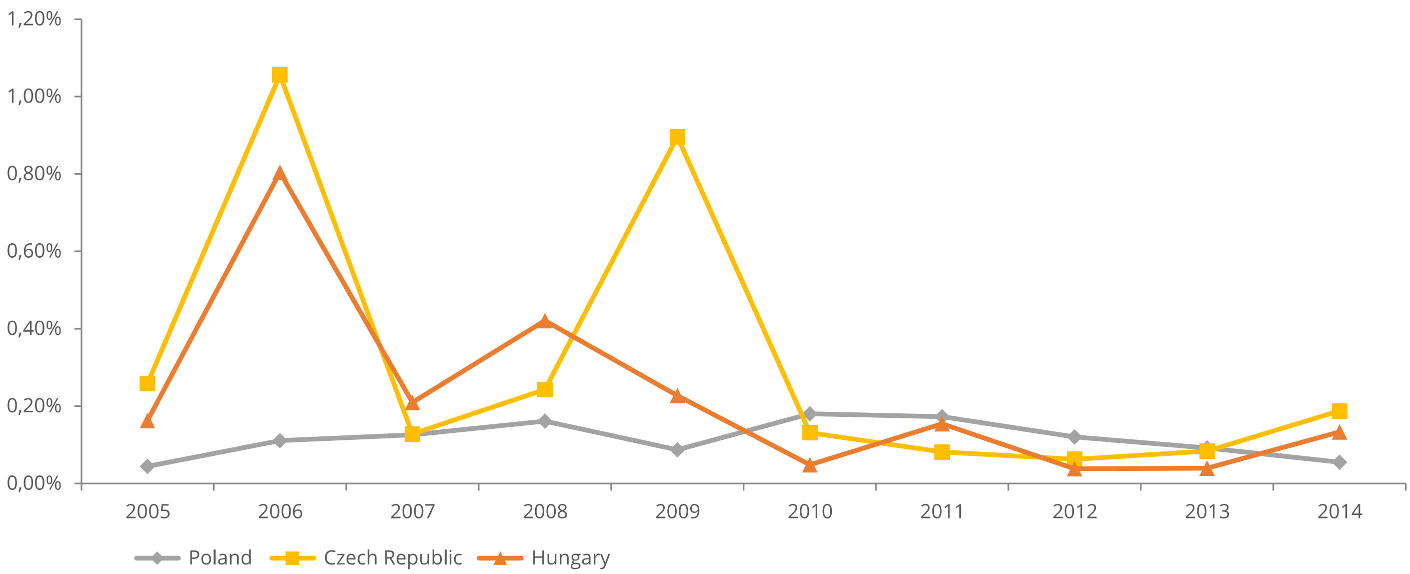
Figure 8: Cumulative characteristics of the Private Equity industry in Poland, Czech Republic and Hungary 2005-2014



Source: Own calculations based on data provided by EVCA

The structure of the Polish PE market differs substantially from its neighbours. The quantity of deals realized annually is higher, yet the average transaction is of lower value. To emphasise, in Poland, there has been no Private Equity investment exceeding value of EUR 500m, so far, while in Hungary and the Czech Republic, PE funds realized several transactions largely exceeding this size. The fragmentation of the Polish market, however, resulted in developing Poland-based Private Equity funds focused on mid-cap companies, which by transferring the know-how acquired on the domestic market, literally dominate this market segment in the region.

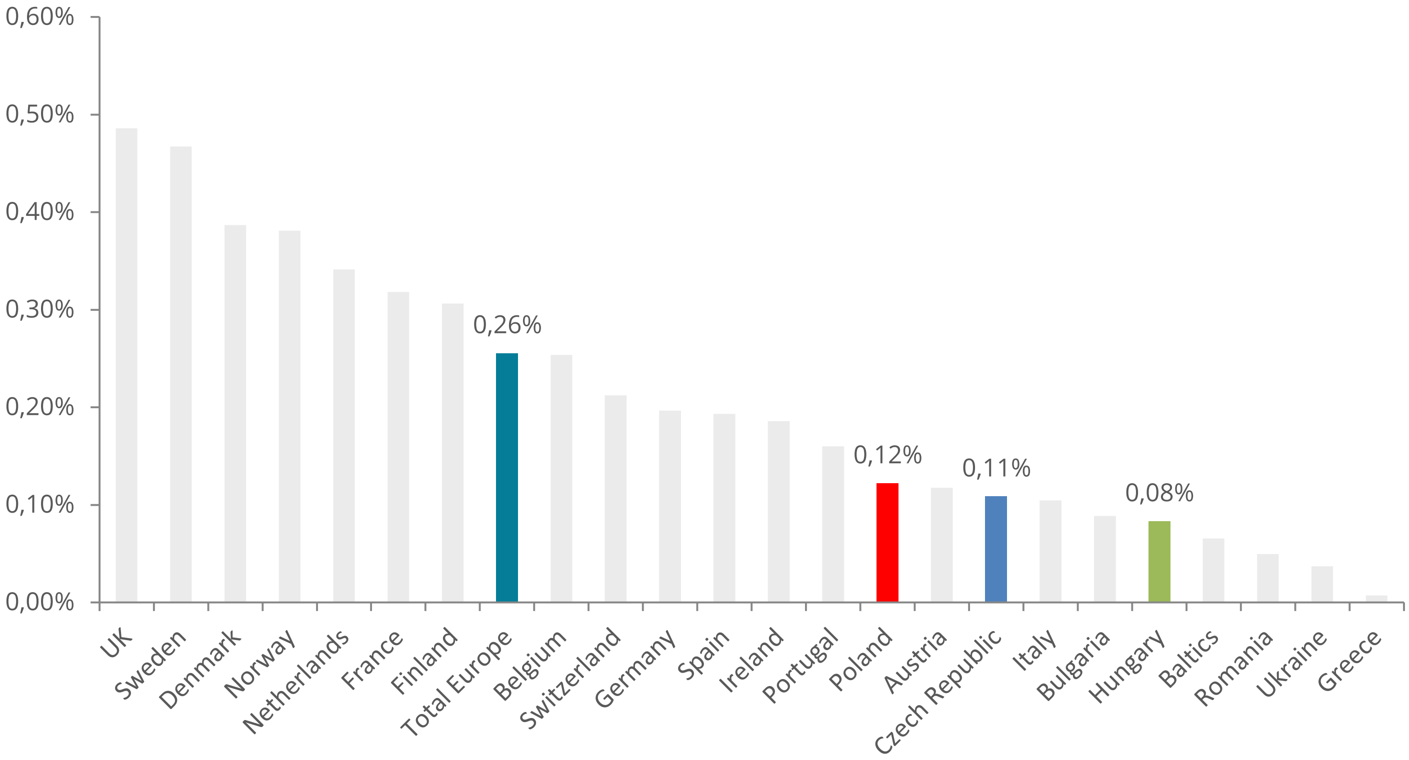
Figure 9: Relation of Private Equity Investments to GDP between 2005 and 2014



Source: Own calculations based on data provided by EVCA

Comparing the relation of Private Equity investments to national GDP, it is easy to observe that after the period of tremendous buy-outs that resulted in surge of this measure in Czech Republic and Hungary, the ratio is relatively consistent among the three analysed countries. As seen below, it is especially visible in the period from 2011 to 2014.

Figure 10: Average PE/GDP ratio among major European economies between 2010 and 2014



Source: Own calculations based on data provided by EVCA

Compared to all the major European economies, significance of Private Equity in Poland, Czech Republic, and Hungary is considerably lower than in almost all the 'old EU countries'. The average contribution of the Private Equity market in the European economy in 2010-2014 was equal to 0.26%, while in the most attractive countries for PE, funds reached 0.34%-0.49%. The Visegrad Group has significant potential to use PE financing better; however, it faces significant obstacles in its way.

2.5.2 Obstacles for the development of PE in the Visegrad Group

First is a problem in generation of relevant deals. Many Private Equity funds that entered the region found it difficult to build a pipeline of potential transactions. With the expiry of privatization programs and most private companies having not yet reached appropriate size, especially large PE funds with min. equity tickets of EUR 50m ended up with lack of potential targets to invest. Sizeable amounts of capital committed by investors during the peak time end as a never invested 'dry powder'. Even the most successful mid-cap and small-cap PE firms struggle to gather a pipeline that will be large enough to build a well-diversified portfolio of investee companies.

The main reason is a prevalent misunderstanding of the rationale behind PE activity among entrepreneurs and its impact on the growth of businesses in the expansion stage. Many businesses in the region are still characterized by relatively simple, low value-added, not sustainable business models (e.g., highly dependent on one customer), lack of long-term strategy, and low level of innovativeness. Their attractiveness for value seeking investors as PE funds is low. Such a limitation of attractive targets often leads to bidding wars between PE funds in the region when interesting targets arise. These wars result in overpaid transactions, which make it difficult for funds to generate required returns.

Another issue is the deeply rooted significance of personal connections and local entrenchment in the markets, which makes not only the origination process, but also the management of investee companies and exit from them very challenging for foreign based firms. The barrier was tried to overcome by establishing regional offices led by local professionals; nevertheless, it has not solved all the problems, as often, the entrenchment in the market is needed in the highest level of management. This is also one of the secrets behind the huge success of mid-cap firms led by local manging partners, who are sometimes even founders of these firms.

Exiting the investee companies is often another source of problems for PE funds in V4. The predominant exit method is trade sale to a strategic buyer. Based on the limited liquidity of local capital markets, this form of divestment is especially important. As the number of local strategic players, which are sizeable enough to undertake larger M&A transactions, is limited, PE funds often rely on selling their portfolio companies to foreign investors, who are highly vulnerable to overall economic conditions of the region and overall global market sentiment. This often limits the ability of the funds to divest their assets at satisfying prices.

The prevalent problem of the region is also marginal contribution of local Limited Partners in funds raised by the local PE sector. While in Europe, domestic investors contribute ca. 28% of funds raised by PE, and in some countries, this ratio even exceeds 40% - in V4, only around 10% of capital is provided by local investors[23]. Those differences originate also from the reluctance of local players, including banks and insurance companies, to invest in this asset class, and regulations, which do not allow, e.g., pension funds, to contribute in PE investments. Such low levels of contribution of local capital in PE funds not only directly diminishes the capital base, but also discourages foreign investors from participation in ventures.

Finally, there are also issues that affect the Private Equity industry in an indirect way; however, it is necessary to stress their unquestionable importance for the underdevelopment of the markets in Visegrad Group. Those are connected to a generally negative environment for investment, incl. lacking professional standards and negative attitude towards financial investors and capital markets.

All of the above mentioned problems resulted in decreased attractiveness of the region for Private Equity investors. The recent fundraising efforts of local funds were significantly below expectations.

2.5.3 Growth prospects

Despite the gloomy picture of the PE market in V4 countries in the last paragraphs, there is also a silver lining. First, the region is still much more attractive in terms of growth opportunities than almost all of the ‘old EU countries’. This growth factor has been a main motive for foreign investors to enter our markets in the last two decades, and we believe that in the medium- to long-term, the trend will continue. Therefore, PE funds will have the potential to continue consolidating fragmented industry sectors in the Visegrad Group, such as consumer goods and services, healthcare, pharmaceuticals, and particular segments of telecommunications industry. There will still be potentials arising for sizeable transactions from spin-offs from restructured state-owned companies and renationalisation endeavours, especially from the Polish and Hungarian governments in the long-term.

Given the perennial budget deficits in most local authorities in the region, which stand in contrast to significant infrastructural needs, partnerships of PE funds with local authorities and municipalities are an attractive source of potential investments for PE funds in the future. A blueprint for this type of transaction has been set in 2014, by acquiring the largest operator of cable cars and ski lifts in Poland by a PE fund.

The PE markets in more advanced economies in Europe are turning to more sophisticated transactions than pure consolidation driven growth deals. These transactions include, e.g., acquisitions of platform companies to integrate the entire supply chain around them, or deals with advanced financial engineering structures. Such complex transactions will require much more effort and skills of PE funds; hence, the value added from activities of PE funds for the economy is likely to increase considerably. This trend will also expand onto the Visegrad Group, leading to a higher professionalization among PE funds, crowding funds out of the markets, which will not be able to perform those types of sophisticated transactions. However, we see prospects of improvement of the pipeline in the coming years.

The fact that many small, private businesses, established early after the economic transformation, have grown large enough to become possible targets for PE funds is one of the most positive signs for the PE industry in the region, especially for mid-cap focused funds. These companies have often been developed solely by their founders and become family businesses, without clear succession strategies. With

23 EVCA, 2015, ‘Central and Eastern Europe Statistics 2014’, European Private Equity & Venture Capital Association, Brussels

founders approaching the retirement age, these businesses will strive for new owners or experienced partners supporting the next generation in further development, hence giving PE funds attractive investment prospects.

Weighting the obstacles and growth potentials for the PE sector in V4, we come to a positive conclusion. We believe that Private Equity as mean of finance has got high upward potential and could be a crucial partner for the increase of value-added activities of companies from our region.

Clearly, there is a substantial upward potential for the PE market in V4 countries; however, to ensure exploitation of this potential, some crucial measures must be implemented (some key areas must be revised).

2.5.4 Recommendations

Several countries in Europe, namely the United Kingdom, Sweden, Denmark, Norway, and the Netherlands, are outstandingly attractive for Private Equity funds. Those countries share characteristics we would like the Visegrad Group to use as role model to develop our local PE markets and catch up with European average.

Increase financial stability and economic friendly environment

Financial stability of an economy can be reflected by credit ratings assigned by international rating agencies, such as Standard & Poors. As shown in the following table, all 'role model' countries ensure the highest possible AAA rating, translating into almost zero risk of credit default of their sovereign debts, also indicating a low risk of investment into the country. This is achieved through sound economies, stable financial systems, and safe political climate. Although this factor is important to investors in capital markets and the economy, it is especially vital to investors providing capital for PE funds, which are perceived as an asset class with one of the highest exposures to risk. The overall business environment plays a crucial role, and it is not a coincidence that the 'role model' countries are ranked top positions of the World Justice Ranking[24], World Bank's Ease of Doing Business Ranking[25], and others. The improvement of law system and protection of foreign investors is in line with the earlier mentioned financial stability, an absolute sine qua non for developing PE sector in the Visegrad Group. To increase and maintain their higher credit rankings, the Visegrad Group countries should treat a predictable and safe political climate, sound economic growth, and stable financial sectors as an absolute priority of their policies. The Group could collaborate on these fundamental issues and benefit from intra-Group spill-over effects.

Country	S&P Rating as at 26.02.16	Stock Market Cap/GDP ratio in 2014	World Justice Ranking	Ease of Doing Business Ranking	Global Innovation Ranking
United Kingdom	**AAA**	**129%**	**12**	**8**	**2**
Sweden	**AAA**	**131%**	**3**	**11**	**3**
Denmark	**AAA**	**101%**	**1**	**4**	**10**
Norway	**AAA**	**57%**	**2**	**6**	**20**
The Netherlands	**AAA**	**100%**	**5**	**27**	**4**
Poland	**BBB+**	**71%**	**21**	**32**	**46**
Czech Republic	**AA-**	**24%**	**20**	**44**	**24**
Hungary	**BB+**	**15%**	**37**	**54**	**35**

Sources: gpw.pl, oslobors.no, sdw.ecb.europa.eu, nasdaqomx.com, londonstockexchange.com, ftp.pse.cz, bse.hu, tradingeconomics.com

24 http://worldjusticeproject.org/sites/default/files/roli_2015_0.pdf

25 World Bank Group, 2014, 'Doing Business 2015', http://www.doingbusiness.org/~/media/GIAWB/Doing%20Business/Documents/Annual-Reports/English/DB15-Full-Report.pdf

Increase innovativeness of our economies

The economic change is increasingly based on enterprises connected to new technologies. Some are disruptive businesses, which by changing established industries, are also becoming increasingly attractive to PE capital. However, in terms of innovativeness, our region also lags behind such countries as the U.K, Sweden, Netherlands, or Denmark, which are ranked in the top 10 of Global Innovation Ranking[26]. Our recommendations towards creating the new Silicon Valley in our region aims at closing this gap, which will lead towards an entrepreneurial eco-system, promoting innovativeness and, eventually, attract PE capital.

Increase significance of capital markets

All but one of the analysed 'role model' countries possess stock exchanges with the capitalization exceeding their annual GDPs. Such sizeable platforms allow Private Equity funds invested in the country to exit their portfolio companies by IPO in the local market, which sometimes is an appealing alternative to sales of the company to a strategic buyer. The trend towards a higher sophistication of transactions will also increase the demand for more sophisticated financing structures and financial products. The development of our capital markets are significantly important to the economies of the Visegrad Group, hence will be elaborated on in the next chapter.

26 Dutta, S., Lanvin, B., Wunsch-Vincent, S., 2015, 'The Global Innovation Index 2015', Geneve

2.6 Capital Market and Stock Exchanges

COMMENT

The development of a vibrant capital market in V4 countries is crucial to long-term financial stability. It allows for raising capital and providing liquidity in a safe manner, in local currency and without reliance on a frequently constrained financial sector. Such development is not happening in isolation from the changes taking place in the rest of the world. But developing financial sector and capital markets is not a new topic for V4, it all started 25 years ago with first privatisations, IPOs, establishment of stock exchanges, privately owned banks, brokerage houses. V4 did catch up quickly in the past 25 years but what does the future hold? Will V4 capital market resemble a perfectly organised French garden or rather more a wild English one? How will innovations, like crowdfunding, and globalisation shape the V4 market in the next 25 years?

Jacek Kubas, *Principal, Local Currency and Local Capital Market Development, European Bank for Reconstruction and Development*

2.6.1 Significance of Capital Markets

The level of maturity of the domestic capital market is usually associated with the level of development of an economy. Various research studies indicate that an efficient capital market is beneficiary to economic growth, macroeconomic performance, job creation and hence growth in living standards.

Modern capital markets have got two basic, interrelated functions: they help to allocate capital within an economy and help to manage risks. In the former it channels through debt and equity markets capital towards companies, which use the capital for further investments and developing their activities, further fuelling their growth. In the latter investors and companies can use the derivatives market to overcome risks they have in their portfolios and asset/liability exposures[27]. Prices on capital markets adjust constantly – giving evidence of changes in the outlook of investors' investment decisions to buy or sell assets. Thus the allocation of capital is based on market principles, ensuring an efficient allocation of capital. This enforces discipline on policymakers and listed companies, which must constantly work on their product and service range, business model, etc. to attract capital inflow. Companies therefore have to put continuous effort into communication with current and potential investors, which also enhances the professionalism and transparency of companies. The constant market verification, in theory, also simplifies the work of state authorities, as they (and eventually the tax payer) benefit from a higher visibility and shared burden in controlling listed companies[28]. The increased professionalization and transparency has played and still could play a vital role in further advancing the transformation of 'state-molochs', which are still present in the Visegrad Group. State-molochs are former state-owned companies that have not or have been partially privatised; consequently, their decisions regarding management position allocation and business activities are still largely influenced by governments and individual politicians. This influences negatively the companies' perception on capital markets, hence hampers market valuations and value creation, even if they have professional managers.

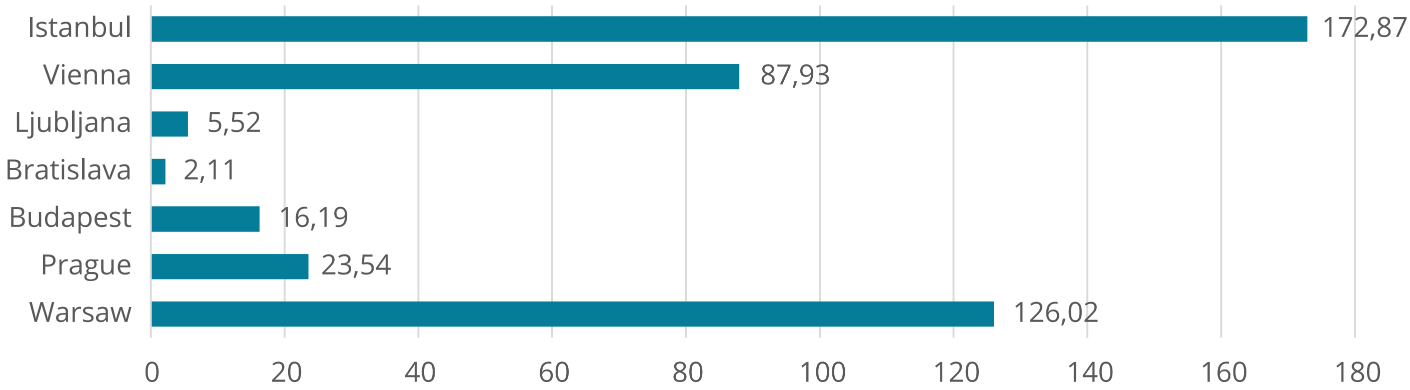
Capital markets offer opportunities for a broad scope of entities, starting from small to medium-sized enterprises, over international conglomerates to municipalities. With the background of tight communal budgets and utilisation of EU-funds in V4, capital market financing becomes increasingly important for the latter. More importantly, capital markets enable the provision of capital to companies which are less likely to obtain financing from banks: SME's and start-ups. Both need capital to accelerate their growth, with start-ups typically seeking equity capital. A dynamic capital market facilitates private equity investments of venture capital and other investors, enabling young companies to prosper and eventually build up a successful track record, which could lead to an initial public offering (IPO) at the stock exchange. As described in earlier parts of the report, these financing possibilities are interrelated and self-reinforcing. Start-ups gain much needed capital for rapid growth, investors gain an exit option, attracting more investors.

27 Dudley, William C. and Hubbard, R. Glenn (2004); How Capital Mark Enhance Economic Performance and Facilitate Job Creation; Global Markets Institute Goldman Sachs; New York
28 Warsaw Stock Exchange (2015), investor

More established companies using capital market financing can attract finance for projects with higher risk profiles, which possibly would not receive funding from banks. This helps to foster innovation and competitiveness, benefiting the economy overall. Therefore, the capital market offers a real alternative to bank lending, leading to a more diversified, hence sustainable financing structure, as well as decreasing costs of funding for the economy.

2.6.2 Capital markets in the Visegrad Group

Figure 11: Market capitalisation of main stock exchanges in CEE (Value at December 2015 in bn. EUR)



Source: Warsaw Stock Exchange, Federation of European Stock Exchanges (2016)

The capital markets of the Visegrad Group are classified as emerging markets. This is being expressed by the sophistication of the markets, the availability of financial products, and the capitalisation and liquidity of the respective markets. The total capitalisation of the stock exchanges in V4 equals to EUR 165bn., with Warsaw Stock Exchange (WSE) being three times larger than the remaining bourses of the Visegrad Group aggregated (per January 2015). Established in 1991, WSE could grow in size, thanks to its role as facilitator of privatisations of state-owned corporations. The capital market, therefore, had a crucial role in the transformation of Poland's economy. The Polish capital market was largely benefitting from investment activities of private pension funds (OFE), which constituted the third, private pillar of the pension system. The funds were key players in the region's capital markets by largely investing in local equity and debt. In 2014, however, the Polish government introduced Hungary-inspired reforms to nationalise significant parts of the funds' assets, initiating transfers of PLN 153bn. into the state's social insurance system. Additionally, the government largely restricted investment activities of the funds, which in combination with transferring assets, became a nail in the coffin of the funds' capability of continuing to be a significant market player on the region's capital markets. Pension funds traditionally constitute an important growth factor for emerging markets capital markets. Based on their strong regulations and long-term investor profile, which often included a buy and hold strategy for their investment (until the maturity of the security), they have also hampered a secondary market to develop necessary liquidity.

With a capitalization of nearly EUR 25bn., Prague Stock Exchange is the second largest stock exchange in V4. It is part of the Central and Eastern European Stock Exchange Group (CEESEG), which until recently, consolidated the stock exchanges of Vienna, Prague, Bratislava, and Budapest. By 2015, CEESEG sold the latter two bourses, with Budapest being acquired by the Hungarian Central Bank. The main growth driver for Poland's capital market were voluminous privatisations of state-owned companies – a strategy the Hungarian government intends to imitate for the privatisations of its shares in companies, including recently acquired banks and energy utilisation companies (Zoltan, Lovasz, & Balazs, 2015). Hungary's capital market is, by a small margin, smaller than the Czech Republic's (see chart number …). In 2010, Hungary's government has nationalised FT 3,000bn. (USD 14 bn) worth of assets during the private pension reform in 2010. Comparable to Poland, it has led to a significant deterioration of domestic investors from an already small investor pool. In line with the size of its economy, Slovakia has the smallest capital market of V4. With a capitalization of EUR 2bn., it is of no significance for the domestic economy.

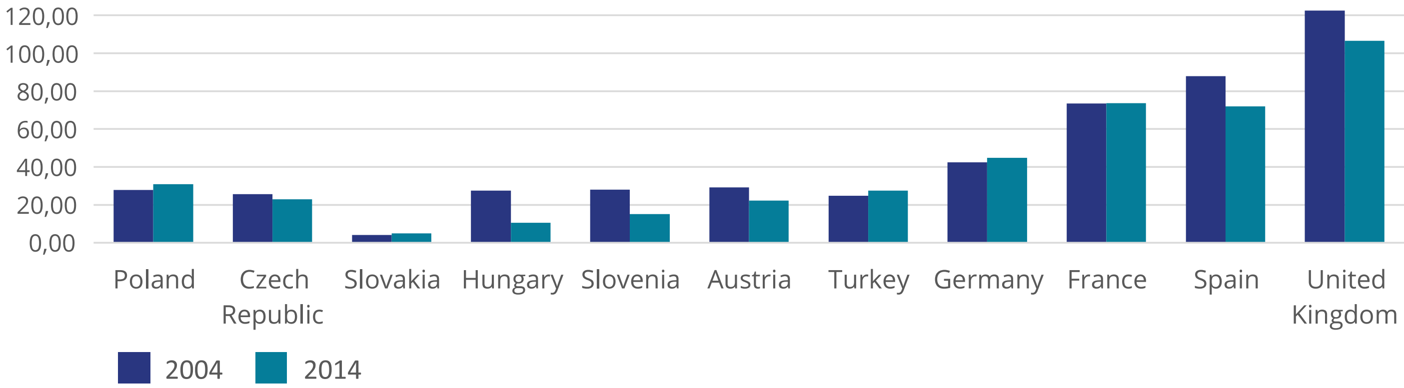
Comparing our stock exchanges to counterparts in the region, especially the region's main competitor Borsa Istanbul (Turkey), it becomes evident that our considerably underdeveloped and fragmented markets are increasingly losing competitiveness, which hinders growth of our companies[29]. Turning the look westwards, the mature capital markets of our European neighbours offer much higher access to investors and deeper liquidity on primary and secondary markets. This poses a huge risk of losing local companies as customers of our stock exchanges, hence, furthermore lowering the potential and significance of region's markets. In 2015, Hungarian low-cost airline, Wizzair, offered evidence for our region's low competitiveness, by choosing London over Budapest and Warsaw for its IPO[30]. Eventually, the capital market of the Visegrad Group is characterised by rather low turnovers, low liquidity and access to investors, and lack of a coherent long-term strategy for the development of the region's capital market – both, as individual markets, and Visegrad as a whole.

Additionally, there is a lingering underdevelopment of accounting standards, especially among private companies, which are not required to and rarely adhere to IFRS standards and, therefore, lose the potential interest of many foreign investors. Market participants try to overcome this hurdle with the support of professional advisors; however, sometimes it does not work as a total remedy.

2.6.3 Creation of a single capital market in CEE?

The CEESEG was founded in January 2010 to create an integrated Central European capital market under Vienna's leadership and to become a core competitor to WSE's rising position. Initially, both competitors were of comparable sizes: Warsaw was home to 800 companies with a total capitalisation of EUR 125.8bn, compared to CEESEG's EUR 128.5bn, yet composed by 248 listed companies (Carré, 2012). The market environment for the newly created group has proven to be unfavourable, as foreign investors rather consolidated their emerging markets positions because of the financial crisis. Also the expansion of the crisis into the underlying real economies of the respective members of CEESEG was not supportive for the development of the merged capital market. On the contrary, Poland experienced in that period the highest aggregated growth among the respective countries, which had somewhat of an assuasive effect on WSE. Vienna Stock Exchange, in connection with CEESEG, was also engaged in partnerships with stock exchanges from Southeast Europe. The vision of creating a single capital market for CEE advanced further with talks between WSE and CEESEG on a potential merger. The cessation of negotiations in 2014 confirmed that the combination of five stock exchanges with five financial supervision authorities, five boards, four currencies, and two divergent trading systems into one capital group is too sophisticated to create real added value. The failure of the merger raises the general question, whether it is possible to create a single capital market in CEE.

Figure 12: Market capitalization of listed domestic companies (% of GDP)



Source: World Bank, 2015

Case studies: MILA and Nasdaq Nordics

29 Nič, M., & Świeboda, P. (2014). Central Europe fit for the future: 10 years after EU accession. Retrieved January 20, 2015, from http://www.cepolicy.org/publications/central-europe-fit-future-10-years-after-eu-accession

30 Zoltan, S., Lovasz, A., & Balazs, E. (2015). Hungary's Orban Vows to Ease Bank Burden After 5-Year Battle. Retrieved December 23, 2015, from http://www.bloomberg.com/news/articles/2015-02-09/hungary-s-orban-vows-to-ease-burden-on-banks-after-5-year-battle

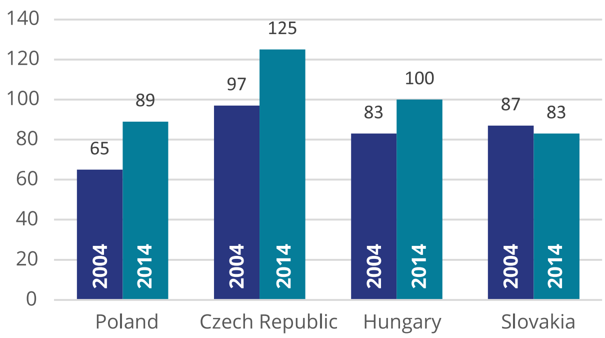
Alliances between cross-border stock exchanges are debateable, and recent failures of high-profile bourse mergers seem to justify question marks behind those. Chile, Peru, and Colombia launched, in 2011, the Latin America Integrated Market (MILA), which nearly doubled its market capitalisation to nearly USD 1tn. through incorporating Mexico Stock Exchange in 2014. In theory, the bourses were hoping to accomplish greater liquidity, larger economies of scale, and increase diversity of listed entities and financial products. MILA, offering one access point to four distinct markets, was expected to increase international visibility, eventually, leading to a higher investor base. However, although the stock exchanges advanced in the integration, relevant governments, public institutions, and regulators, so far, failed to advance the synchronisation, which prevails an integrated market to get its feet off the ground[31].

Perhaps, long before their acquisition by Nasdaq in 2008, the Nordic stock exchanges of Finland, Sweden, Iceland, and Denmark depict a much better example of successful pan-regional collaboration. From the merger of Sweden's OM and Finish HEX (then forming OMX) in 2003 and incremental integration with other bourses, the countries managed not only to collaborate on the operational side, but also synchronised activities and policies of the above mentioned stakeholders, with significant influence on the development of cross-border capital markets. Admittedly the scale of the described capital markets exceeds V4's significantly (capitalisation of Nasdaq OMX Nordics & Baltics EUR 1.1tn. per 12.2015) and the Nordic/ Scandinavian states look back at a longer history of collaboration on various fields; however, they might display a counterargument in favour of pan-regional alliances of bourses.

The case of Nasdaq OMX Nordics signifies that a mutual effort across borders raises opportunities for developing a functioning capital market of scale. As discussed above a stable financial sector is fundamental for a long-term sustainable development of economies.

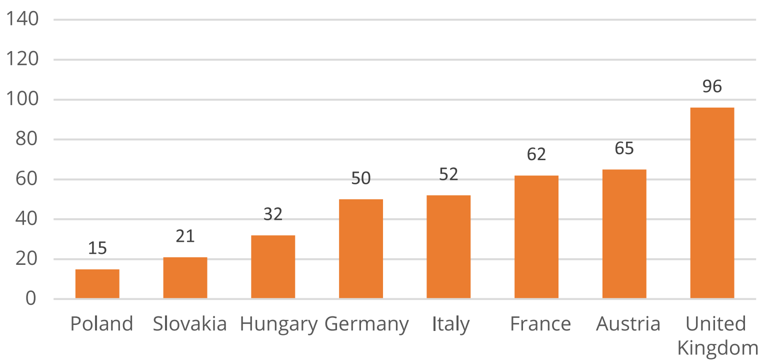
The Visegrad Group's financial sectors are very bank-centric, with total banking assets exceeding significantly the corporate debt instruments as percent of GDP (see graphs below). The total banking assets are below, or at par with GDP (except the Czech Republic), which is an indicator for a balanced funding of the economy. However, the low share of corporate debt instruments on the stock exchanges is an indicator of under-utilised potential of the capital markets. Although Poland leads V4 in the development of the capital market, with 15%, it has the lowest share of issued debt. This signifies that the whole of the Visegrad Group should put more emphasis on developing their capital markets, including corporate debt markets. Moreover, it is not to be forgotten that significant capital market financing occurs independently from stock exchanges. Single efforts will be far less effective than joint initiatives.

Figure 13: Total banking assets in mio. EUR (% of GDP)



Source: Raiffeisen Research 2015

Figure 14: Corporate debt instruments as % of GDP



Source: PwC, 2015

The development of local capital markets is increasingly linked to EU markets and legislation, especially given to prospect of an EU Capital Market Union. The opportunities and threats for our regional could be described at length, yet the EU membership facilitates convergence in regulations, infrastructure and instruments, hence capital market integration already. This raises the question about the long-term sustainability and feasibility of local or regional exchanges and capital markets. We believe that that with the ambition of developing our entrepreneurial eco-system, fostering the innovativeness of our start-ups, small- and medium-sized enterprises, and the overall economy a dynamic and vivid capital market in Visegrad is to be considered an important factor. Also smaller companies are less likely

31 Gallagher, J. J. (2015). MILA: Latin America's integrated market. Retrieved February 1, 2016, from http://www.theworldfolio.com/news/mila-latin-americas-integrated-market/3586/

to be able to list on major exchanges. As even without in an EU Capital Market Union our fragmented capital markets run the risk of marginalisation, our countries should engage in strategic partnerships and collaborate to increase of the overall pie in the region.

Effective capital markets necessitate a firm foundation and long-term, ongoing nurture of its components. They consist of a stable political and macroeconomic development, which lead to predictability, enforcement of laws and property rights, transparency and accuracy in accounting and financial reporting, and regulations incentivising good corporate governance. These are ingredients, which lay the foundation for a long-term development and our recommendations.

2.6.4 Recommendations

Create long-term V4+ capital market development plan

To create a stable and stimulating environment for developing the capital market it is not sufficient to introduce individual improvements or initiatives. As indicated by the example of MILA, even if individual bourses collaborate effectively, without the support of regulators, supervisors, and governments, the market still will be hampered. Borsa Istanbul, the main competitor of WSE and the CM in CEE, has been created as a result of a strategic plan in 2013. Ever since, it has been developing strategic partnerships with bourses in the Middle East, Nasdaq, EBRD, universities, and others, thus advancing in significance on CM league tables. If our countries want to develop their capital markets, they have to prove clear commitment, based on trust and respect for market principles. We consider the development and execution of a coherent long-term strategy by governments, stock exchanges, and other crucial stakeholders as unconditional. We believe that by developing a strategic plan nationally and synchronizing it within V4+, our countries would (1) create a clear path for all participating countries, (2) combine efforts in developing a capital market in V4+, and (3) enhance financial stability of the whole region.

Put capital markets in a central role of sources of financing

The financial sector in Europe is bank centric. Even more so in V4. SMEs attract five times less funds from capital markets than in the US (WSE, 2015). Financing through capital markets enhances transparency, professionalism of companies, and helps to finance riskier projects. Given the background of inefficient state administration and bureaucratic state-owned 'molochs' in V4, CM financing should help to transform the economy. To diversify the sources of funding of the economy and increase competition within the financial sector, we recommend to incentivise companies for capital markets financing.

Creation of positive sentiment

Capital markets in our region suffer from negative market sentiment from entrepreneurs, potential retail investors, and politicians, who often perceive the CM as a 'casino'[32]. This understanding is based on insufficient financial education and has been fuelled by the financial crisis and the reforms of pension funds in Hungary (2011 and 2013) and Poland (2014). The reforms have decreased the prospects and funds available for investment on our capital markets, weakening their capability to support the economy and international competitiveness. The overall negative climate also influences the climate towards investing in the region, which is negatively affected by cases of unfavourable perception of foreign capital in the region and regulatory constraints for private and foreign capital in some sectors. The negative sentiment towards CM keeps retail customers away from investing on our CM. This is to be seen as considerable constriction to growth of the markets, as the total household deposits in V4 of EUR 256bn. exceed the total V4 market capitalisation of EUR 167bn. significantly[33]. We recommend creating a more welcoming political climate around stock exchanges, which would attract institutional and private investors.

32 Kowalczyk, K. A. (2015). Politycy robią z giełdy kasyno. Retrieved February 02, 2016, from http://www.rp.pl/Wywiady-i-opinie/308189819-Politycy-robia-z-gieldy-kasyno.html
33 Federation of European Securities Exchanges (2016) Database

Introduction of new financial products

Next to low liquidity and low turnovers, our markets offer a much lower product diversity than our regional competitors. There are four Exchange-Traded Funds (ETFs) available on V4 Capital Markets (three Warsaw, one Budapest). Vienna Stock Exchange, although being half as large as ours (market capitalisation EUR 88bn.), offers nine products in this category. The same applies to the bond market, where Vienna listing 3,304 bonds offers around four times more debt instruments. We believe that to develop our capital markets, it is important to keep up with regulatory standards of mature European markets, which would enable us to introduce according asset classes. Prime examples for deficits in this respect are Real Estate Investment Trusts (REITs), which are not yet available in Poland, securitization. Also, we recommend expanding towards less orthodox asset classes. The Czech Republic, in 2014, has laid the basis for Islamic finance investments. Sharia compliant investment vehicles could be expanded, giving V4 access to further highly sought sources of capital. New asset classes could have the potential to attract higher amounts of diversified investors, enabling us to develop our capital market, whilst simultaneously tapping into new sources of finance to support the realisation of crucial investments for our economies.

3. AUTHORS

Damian Polok
Project Leader
Team Leader Finance

Born in Poland, raised in Germany, Damian understood early on in his life about the benefits of cross-cultural cooperation. His career path led him through some of the world's financial centres, including London, Frankfurt, Moscow, Shanghai and Singapore. For his studies in CEMS International Management and International Business he has chosen Cambridge, Berlin, Warsaw and Hong Kong.

As alumni of the Academy of the Leaders of the Capital Market, the American Institute of Political and Economic Systems in Prague and Visegrad School of Political Science, he is largely engaged in Central Europe's integration. He organised the Central and Eastern Europe Capital Markets Leaders Forum in Warsaw and contributes to the public debate on the region's development in finance, education and entrepreneurship through publications and comments in media. In his free time Damian is a passionate football and rugby player and a dedicated passport stamp collector.

Pawel Michalski
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Paweł has two years of experience in project and structured finance with the biggest bank in the CEE. He is also involved in matters relating to infrastructure and energy investments. Prior to his role at the bank he gathered experience in at legal firms, providing capital market related services.

He graduated from the Faculty of Law at the University of Warsaw (with distinction) and pursues his second degree at the Warsaw School of Economics. He also studied at the University of Zurich and completed the German Law School organised by the University of Bonn.

In his spare time Paweł develops non-governmental and charity projects. He leads the Infrastructure Team at the Young Reforming Poland and is a member of the board at Weimar Triangle Association. Paweł also helps developing several projects of the Lesław Paga Foundation, including the Capital Market Leaders Academy. He also enjoys reading books and playing basketball.

Damian Szewczyk
Team Leader Energy and Infrastructure

Damian has 5 year experience both in private and public sectors. He is currently engaged in FinTech and Venture Capital sectors developing an international private bank. Previously he has been working an investment professional in Polish State Railways Group (transport and real estates), Credit Suisse and Bastion Group (investment banking).

Besides business he is engaged in a number of pro bono initiatives concentrated on capital markets education in Leslaw Paga Foundation through participation in Capital Market Leaders Academy and CEE Capital Market Leaders Forum as an originator and project manager. He is also a member of the Board in "The Young Reforming Poland" association dealing with public policy issues as an expert for energy, infrastructure and capital markets.

He graduated from Cracow University of Economics and holds a MSc in Corporate Finance Management and Controlling. He studied also in Wirtschaftsuniversität Wien. In free time he runs and travels.

Dominik Keil
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Dominik is a passionate of analysing varying businesses from financial and strategic perspective. He started his career while pursuing two bachelor faculties at Poznan University of Economics, namely: Strategic Management and Finance & Accounting. During his studies he completed a one year internship in the Valuation and M&A department of Polish branch of international advisory firm Grant Thornton. After exploiting opportunities in Poznan he decided to move to Warsaw, where he completed summer internship at Innova Capital – one of the leading Private Equity firms in the CEE region. The internship sparked his interests in the Private Equity industry, in which he decided to specialize in his further academic endeavours. Currently Dominik is pursuing his two-year master's degree in Finance & Investments at Copenhagen Business School. This year, he will also join Deutsche Bank, as a Summer Analyst at Investment Banking Department in London. In his spare time Dominik enjoys traveling, cinematography and ethnic music.

Sebastian Wieczorek
Finance/Euro

Sebastian has over three years of experience in corporate finance. Currently he works as an Analyst in the Investment Banking Division of a leading bank in CEE. Previously engaged in the venture capital sector, the capital market and research on the financial institution regulations. He is an alumnus of the Capital Market Leaders Academy.

Systematically uses professional and academic background to leverage various charity and social projects. He is a member of the innovation policy team in The Young Reforming Poland association. While studying he was the vice chairman of the leading student project in the field of monetary policy in Poland. His passion to share knowledge with others caused him to develop an educational project which aims to increase awareness of economics and finance, especially among young people.

Sebastian graduated from Warsaw School of Economics and holds a Master degree in Finance and Accounting with specialization in Banking. He was awarded a best master thesis in the field of economics and finance. In his free time Sebastian writes articles, runs or lifts weights.

Petra Kaciakova
Euro

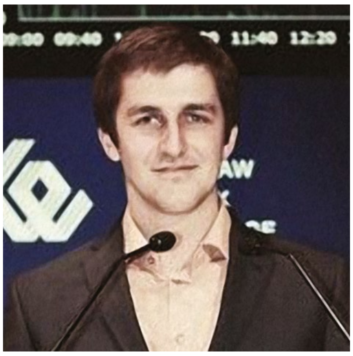
Petra was born in Slovakia, but moved to Prague, Czech Republic, where she is already living for 6 years. She finished bachelor's degree in economics at University of Economics in Prague and is currently finishing master's degree in Law at Charles University. During her studies she participated in different student NGO projects as a project manager or financial director. She is interested in business and investments and is working for small czecho-slovak investment company as a financial analyst engaged not only in analysis, but also in many legal questions targeting the ongoing business. Her hobbies are fitness, weight lifting and travelling.

Zsombor Incze
Finance

Zsombor was born in Budapest, Hungary. He has a strong interest towards entrepreneurship and capital markets, he has launched his first business as a high-school student. Currently he studies Finance MSc at Corvinus University of Budapest after his BA in Applied Economics. His engagement in student life was topped by serving as the Chief Financial Officer, Member of Directorate at Heller Farkas College of Advanced Financial Studies. He has done several internships in various industries. His most recent internship was at Morgan Stanley's Budapest-based securitized products structuring team where he had focused on residential mortgage backed securities. He still has his business interests in IT/real estate. His scientific achievements include student papers in the topics of SMEs, behavioral finance, FDI or energy. In his free time he likes orienteering, sailing and natural photography.

Joanna Rycerz
Energy

Joanna is a lawyer, currently on the last year of Advocates' Training at Warsaw Bar of Advocates. Joanna is scholar of double scholarship of the Rector of the University of Rzeszow for the best students and double scholarship of Lesław A. Paga Foundation in programs Academy of Energy and Academy of Analysis and Media. Joanna is also an alumni of Florence School of Regulation, a Programme Specialised Training Course on Regulation of Gas Markets. Joanna gained experience about the Polish and EU regulations during her work for Polish Energy Regulatory Office, law firms, Polish Power Exchange as well as during course in Florence School of Regulation. Currently Joanna works at Tax & Legal Department at PwC Poland where provides tax and regulatory consulting for energy and oil&gas companies. As an alumni of Lesław A. Paga Foundation she was co-author of numerous publications regarding energy sector and tax law. Joanna is passionate of energy sector and new technologies.



Tomasz Nisztuk
Infrastructure

Graduated from Finance and Accounting at the Warsaw School of Economics and from CEMS Masters' in International Management at Bocconi University and Warsaw School of Economics. During his Bachelor studies he completed an exchange program at the City University of Hong Kong.

Although, during studies he never considered working in rail industry, after graduation he became Business Assistant to the CFO of Polish Intercity Railways and became passionate about railways. As Assistant he helped to coordinate implementation of high-speed railways in Poland and supported CFO in daily activities. Currently works as analyst at EY.

Tomasz took part in multiple extracurricular activities such as Youth Reforming Poland. He has reached the finals of EY Financial Challenger, the most prestigious transaction advisory competition in Poland and is a scholar of the Capital Markets Leaders Academy, prestigious fellowship program for young high-potentials. Privately passionate about travelling and mountaineering. Occasionally Tomasz publishes columns on railways, Warsaw and travelling.

Ondřej Dvouletý
Entrepreneurship

Ondřej was born in the Czech Republic. Currently he is a doctoral student at the University of Economics in Prague, Faculty of Business Administration, Department of Entrepreneurship. He is interested in entrepreneurship and evaluation of impacts of entrepreneurial policies. Previously he obtained master degree in economic policy at the same University. Ondřej also studies a master degree in Entrepreneurship at Linnaeus University in Sweden. Ondřej is not only theoretically interested in entrepreneurship, he has been also engaged in his own business activity focused on data analysis and econometrics tutoring since 2013. To his hobbies belong sport, geocaching and playing chess.

Piotr Krzemiński
Infrastructure

Piotr is currently an entrepreneur, running a family business in Bydgoszcz, Poland. Since 2011 he has been working both in private and public sectors. Among others, he took part in consulting projects in PwC, advised Polish Minister of Infrastructure on road, railway and aviation regulations, and co-managed the market analysis department in Polish State Railways. He graduated from ESCP Europe Business School (MSc) and Poznan University of Economics (BA). Piotr is also engaged in numerous non-profit initiatives such as Lesław Paga Foundation, Civil Development Forum, Youth Reforming Poland association and Toastmasters International. He is passionate about mountain trekking, exotic travels and public speaking.

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