

<b>REPORT DOCUMENTATION PAGE</b>			Form Approved OMB NO. 0704-0188		
<p>The public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA, 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.</p> <p>PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.</p>					
1. REPORT DATE (DD-MM-YYYY)		2. REPORT TYPE Technical Report		3. DATES COVERED (From - To) -	
4. TITLE AND SUBTITLE Lessons and Impressions of the Czech Capital Markets				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER 611104	
				5d. PROJECT NUMBER	
6. AUTHORS Daniel Evans, Margaret Moten				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAMES AND ADDRESSES U.S. Military Academy (USMA-West Point) 15,321.00 Network Science Center 601 Cullum Road West Point, NY 10996 -1729				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS (ES) U.S. Army Research Office P.O. Box 12211 Research Triangle Park, NC 27709-2211				10. SPONSOR/MONITOR'S ACRONYM(S) ARO	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S) 56266-NS-ASS.17	
12. DISTRIBUTION AVAILABILITY STATEMENT Approved for public release; distribution is unlimited.					
13. SUPPLEMENTARY NOTES The views, opinions and/or findings contained in this report are those of the author(s) and should not be construed as an official Department of the Army position, policy or decision, unless so designated by other documentation.					
14. ABSTRACT methodologies to classify Capital Market networks, a research team consisting of two researchers and three cadets from the Network Science Center visited the Czech Republic from 12 - 19 March, 2011. The purpose of the trip was to conduct research on the capital market network in Prague, validate the initial network results, and identify individuals, organizations and roles that should be incorporated into subsequent network typologies. The team has developed network models of three Frontier Markets: <del>Tanzania, Ghana, and Trinidad &amp; Tobago. One of the goals is to construct a quantitative "vertical</del>					
15. SUBJECT TERMS Social Network Analysis, Network Science, Economics, Capital Markets, Frontier Markets					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT		15. NUMBER OF PAGES
a. REPORT UU	b. ABSTRACT UU	c. THIS PAGE UU	UU		19a. NAME OF RESPONSIBLE PERSON John Graham
					19b. TELEPHONE NUMBER 845-938-5022

## **Report Title**

Lessons and Impressions of the Czech Capital Markets

### **ABSTRACT**

methodologies to classify Capital Market networks, a research team consisting of two researchers and three cadets from the Network Science Center visited the Czech Republic from 12 - 19 March, 2011. The purpose of the trip was to conduct research on the capital market network in Prague, validate the initial network results, and identify individuals, organizations and roles that should be incorporated into subsequent network typologies. The team has developed network models of three Frontier Markets: Tanzania, Ghana, and Trinidad & Tobago. One of the goals is to construct a quantitative “vertical comparison” between our Frontier Markets and an Emerging Market. We selected the Czech Republic as the Emerging Market because they liberalized their markets and privatized many government-owned industries at approximately the same time as Tanzania and Ghana.

**Technical Report 12-003**

# **Lessons and Impressions of the Czech Capital Markets**

**Daniel Evans  
Margaret Moten**

U.S. Military Academy, West Point NY

**February 2012**



**United States Military Academy  
Network Science Center**

Approved for public release; distribution is unlimited.

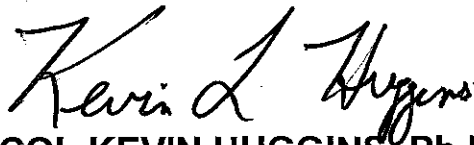


**U.S. Military Academy  
Network Science Center**

**Authorized and approved for distribution:**



**BG (R) CHRIS ARNEY, Ph.D.**  
**Network Science Chair**



**COL KEVIN HUGGINS, Ph.D.**  
**Director of Research**

---

Technical review by

COL John M Graham, Ph.D., Director, Network Science Center, U.S. Military Academy  
Tish Torgerson, Network Science Center, U.S. Military

**NOTICES**

**DISTRIBUTION:** Primary distribution of this Technical Report has been made by the U.S. Military Academy Network Science Center. Please address correspondence concerning distribution of reports to: Network Science Center, U.S. Military Academy, 646 Swift Road, West Point, NY 10996

**FINAL DISPOSITION:** This Technical Report may be destroyed when it is no longer needed. Please do not return it to the U.S. Military Academy Network Science Center.

**NOTE:** The findings in this Technical Report are not to be construed as an official Department of the Army position, unless so designated by other authorized documents



REPORT DOCUMENTATION PAGE			Form Approved OMB No. 0704-0188	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing this collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. <b>PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.</b>				
1. REPORT DATE (DD-MM-YYYY) 13-02-2012		2. REPORT TYPE Technical Report		3. DATES COVERED (From - To) Jan-Mar 2011
4. TITLE AND SUBTITLE  Lessons and Impressions of the Czech Capital Markets		5a. CONTRACT NUMBER n/a		
		5b. GRANT NUMBER n/a		
		5c. PROGRAM ELEMENT NUMBER n/a		
6. AUTHOR(S) Daniel Evans, Margaret Moten		5d. PROJECT NUMBER ARO NetSci 02		
		5e. TASK NUMBER n/a		
		5f. WORK UNIT NUMBER n/a		
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)  Network Science Center, U.S. Military Academy 601 Cullum Road, Thayer Hall Room 119 West Point, NY 10996		8. PERFORMING ORGANIZATION REPORT NUMBER  n/a		
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)  U.S.Army Research Organization Triangle Park, NC		10. SPONSOR/MONITOR'S ACRONYM(S) USMA NSC		
		11. SPONSOR/MONITOR'S REPORT NUMBER(S) 12-003		
12. DISTRIBUTION / AVAILABILITY STATEMENT  Unlimited Distribution				
13. SUPPLEMENTARY NOTES The views expressed in this thesis are those of the authors and do not reflect the official policy or position of the Department of Defense or the U.S. Government.				
14. ABSTRACT As part of the Network Science Center's Frontier Markets research project which is developing methodologies to classify Capital Market networks, a research team consisting of two researchers and three cadets from the Network Science Center visited the Czech Republic from 12 - 19 March, 2011. The purpose of the trip was to conduct research on the capital market network in Prague, validate the initial network results, and identify individuals, organizations and roles that should be incorporated into subsequent network typologies. The team has developed network models of three Frontier Markets: Tanzania, Ghana, and Trinidad & Tobago. One of the goals is to construct a quantitative "vertical comparison" between our Frontier Markets and an Emerging Market. We selected the Czech Republic as the Emerging Market because they liberalized their markets and privatized many government-owned industries at approximately the same time as Tanzania and Ghana.				
15. SUBJECT TERMS Social Network Analysis, Network Science, Economics, Capital Markets, Frontier Markets				
16. SECURITY CLASSIFICATION OF:		17. LIMITATION OF ABSTRACT  UL	18. NUMBER OF PAGES  21	19a. NAME OF RESPONSIBLE PERSON Tish Torgerson
a. REPORT UNCLASSIFIED	b. ABSTRACT UNCLASSIFIED			c. THIS PAGE UNCLASSIFIED





**Technical Report 12-003**

# **Lessons and Impressions of the Czech Capital Markets**

Daniel Evans  
Margaret Moten

U.S. Military Academy, West Point NY

**U.S. Military Academy Network Science Center  
601 Cullum Road, Thayer Hall Room 119, West Point, NY 10996**

**13 February 2012**

---

Approved for public release; distribution is unlimited.



## ACKNOWLEDGEMENT

---

This work was supported by the U.S. Army Research Organization, Project No. 1JO1XR059 and 1FO91XR029.



## **Lesson and Impressions of the Czech Capital Markets**

**Daniel Evans and Margaret Moten**

As part of the Network Science Center's Frontier Markets research project which is developing methodologies to classify Capital Market networks<sup>1</sup>, a research team consisting of two researchers and three cadets from the Network Science Center visited the Czech Republic from 12 - 19 March, 2011. The purpose of the trip was to conduct research on the capital market network in Prague, validate the initial network results, and identify individuals, organizations and roles that should be incorporated into subsequent network typologies. The team has developed network models of three Frontier Markets: Tanzania, Ghana, and Trinidad & Tobago. One of the team's research goals is to construct a quantitative "vertical comparison" between our Frontier Markets and an Emerging Market. We selected the Czech Republic as the Emerging Market because they liberalized their markets and privatized many government-owned industries at approximately the same time as Tanzania and Ghana. The availability of data and the use of English in business were also major determining selection factors.

Prior to the trip, the team built a social network model of the Czech Capital Markets using mainly information about firms, companies, and organizations that is readily available on the Internet. The team initially analyzed the stock exchange and its leadership as well as the major brokers that operate on the exchange. Then they examined the government organizations that influence and regulate the Capital Market.<sup>2</sup>

---

<sup>1</sup> For more information on the team's methodology, please see the team's project summary paper at [www.netscience.usma.edu](http://www.netscience.usma.edu).

<sup>2</sup> For more information on the Prague Stock Exchange Data Collection Paper please refer to [www.netscience.usma.edu](http://www.netscience.usma.edu).

After developing the initial model, the team conducted a network analysis and identified key people and organizations in the network. They then contacted these individuals and organizations in order to interview them, and eventually, refine the initial network model. During these meetings, the team also conducted surveys to gather information about the Social Capital available to each of our interview subjects as well as some of their colleagues. During the week-long visit, the team administered this survey to shopkeepers, wait staff, and other random individuals.

During the visit, the team met with the Economics Counselor at the US Embassy, and representatives from the Financial Markets Department of the Czech Ministry of Finance, the Banking Supervisory Department of the Czech National Bank, four of the five largest brokerage firms that operate on the Prague Stock Exchange, and two different Private Equity firms that operate in the Czech Republic (one focusing on Small and Medium Enterprises (SMEs) in the Czech Republic and one larger, international firm that focuses primarily on Eastern Europe).

### **Czech Republic Background**

The Czechs were part of the Hapsburg Empire for the 300 years prior to World War I. Following the war, Slovaks united with Czechs to form an independent Czechoslovakia. For historical reasons, Slovaks were not at the same level of economic and technological development as the Czechs, but the freedom and opportunity found in Czechoslovakia enabled them to make strides toward overcoming these inequalities. However, the gap along with cultural differences never was fully bridged, and the discrepancy played a continuing role throughout the 75 years of the union.

Germany invaded and occupied Czechoslovakia in 1938. At the close of World War II, Soviet troops overran all of Slovakia, Moravia, and much of Bohemia, including Prague. Following Germany's surrender, some 2.9 million ethnic Germans were expelled from Czechoslovakia with Allied approval under the Benes Decrees.

Reunited after the war, the Czechs and Slovaks held national elections in 1946; the Czechoslovak Communist Party won 38% of the vote and assumed most of the key positions in the government. Under the cover of superficial legality, the Communist Party seized power in February 1948. In January 1968, the Czech leadership took practical steps toward political, social, and economic reforms. The leadership affirmed its loyalty to socialism and the Warsaw Pact but also expressed the desire to improve relations with all countries of the world regardless of their social systems.

The internal reforms and foreign policy statements of the Czech leadership created great concern among some other Warsaw Pact governments. On the night of August 20, 1968, Soviet, Hungarian, Bulgarian, East German, and Polish troops invaded and occupied Czechoslovakia. The principal Czechoslovak reformers were forcibly and secretly taken to the Soviet Union where they signed a treaty that provided for the "temporary stationing" of an unspecified number of Soviet troops in Czechoslovakia. The 1970s and 1980s became known as the period of "normalization," in which the apologists for the 1968 Soviet invasion prevented, as best they could, any opposition to their conservative regime. Political, social, and economic life stagnated.

On November 17, 1989, the communist police violently broke up a peaceful pro-democracy demonstration and brutally beat many student participants. In the days that followed, political groups united to become the Civic Forum, an umbrella group championing bureaucratic reform and civil liberties. Faced with an overwhelming popular repudiation, the Communist Party all but collapsed. Its leaders resigned in December 1989, and Vaclav Havel was elected President of Czechoslovakia on December 29. The astonishing quickness of these events was in part due to the unpopularity of the communist regime and changes in the policies of the Soviet Union.

By 1992, Slovak calls for greater autonomy effectively blocked the daily functioning of the federal government. In the election of June 1992, Vaclav Klaus's Civic Democratic

Party won handily in the Czech lands on a platform of economic reform. Vladimir Meciar's Movement for a Democratic Slovakia emerged as the leading party in Slovakia, basing its appeal on fairness to Slovak demands for autonomy. Federalists, like Havel, were unable to contain the trend toward the split. In July 1992, President Havel resigned. In the latter half of 1992, Klaus and Meciar hammered out an agreement that the two republics would go their separate ways by the end of the year. On January 1, 1993, the Czech Republic and the Republic of Slovakia were simultaneously and peacefully founded. Relationships between the two states, despite occasional disputes about the division of federal property and governing of the border, have been peaceful. Both states attained immediate recognition from the U.S. and their European neighbors.<sup>3</sup>

## **Commercial Banking Background**

Under Communist Rule, there were two banks: 1) Ceska Sporitelna -- a state-owned traditional retail bank with roots dating to 1825, and 2) Československá obchodní banka, a.s. (ČSOB) -- a banking institute established in 1964 as the sole bank providing foreign trade financing and convertible currency operations. After 1989, both banks expanded their activities by including services for new entrepreneurial entities and for individuals essentially becoming “universal” banks. Belgian KBC Bank acquired ČSOB in 1999 and Erste Group, a leading Austrian financial institution, acquired Ceska Sporitelna in 2000. Additionally, numerous other banks were established after 1989, all of which have since been acquired by large Western European financial organizations. These banks have kept their Czech identity except for UniCredit Czech Republic which was formed when the Italian Banking Group UniCredit purchased and combined two Czech banks-Živnostenská banka and HVB Bank.

---

<sup>3</sup> United States. Background Note: Czech Republic, 2011. Web. 11 Jul 2011.



## **Prague Stock Exchange (Burza cenných papírů Praha, a.s. or BCPP) Background**

The original exchange was established in 1871. Initially, both securities and commodities were traded at the exchange, and it enjoyed great success in the sugar trade, becoming a key market for the Austro-Hungarian Empire. After World War I, only securities were traded. For the Prague exchange, the interwar period became the era of its renaissance. The Prague exchange even surpassed the Vienna exchange in importance. This period of prosperity was interrupted by World War II, bringing an end to trading at the Prague exchange for more than 60 years.

After the fall of Communism, the Prague Stock Exchange was reestablished, with the first trades commencing on 6 April 1993.<sup>4</sup> The Vienna Stock Exchange (Wiener Börse, AG) purchased a 92.4% stake of the Prague Stock Exchange in 2008. The acquisition of this stake in the Prague Stock Exchange made the Vienna Stock Exchange the majority owner of three stock exchanges in Central and Eastern Europe. (It is also the majority owner of the Budapest Stock Exchange and the Ljubljana Stock Exchange.) In addition, the Vienna Stock Exchange cooperates closely – without any cross-holdings – with many other stock exchanges in the region, mainly with Bucharest, Sarajevo and Banja Luka.<sup>5</sup>

## **Capital Markets after 1989**

The Czech Government was extremely aggressive in “de-nationalizing” formerly state-run companies and quickly established the Czech equities markets. Citizens were given vouchers that equated to shares of equity of all the nationalized firms that were now public companies. Each share of a company was worth 1000 Czech Koruna. More than 1,700 companies went public in two waves during 1993 and 1994. The government was overwhelmed with monitoring this process and corruption within the individual companies was widespread.

---

<sup>4</sup> "Prague Stock Exchange." Prague Stock Exchange, 11 Jul 2011. Web. 11 Jul 2011.

<sup>5</sup> "Wiener Borse." Wiener Borse, 2011. Web. 11 Jul 2011.

Czech citizens, who had no experience with capital markets and equity investing after some 40 years of Communism, rushed to convert their investments to cash. Many sold their shares at below-market prices to opportunistic investors and became very distrustful of Czech companies and the Prague Stock Exchange. Of the 1,700+ companies originally listed on the Prague Stock Exchange, many have been privatized by shrewd investors. Some firms have been acquired or merged, while many were not viable businesses to begin with and have gone out of business. The number of listed companies dropped into the teens by the late 1990s, but has risen to 27 presently.

**The Czech Republic Capital Markets are heavily influenced by the European Union (EU) regulations.**

The Czech Republic became a European Union member in 2004; however, it retained its currency, the Czech Koruna. Initially, the Czech Republic planned to adopt the Euro as its official currency in 2010, but that date was delayed and integration into the European Monetary Union is not very popular politically. In May 2010, Czech President Václav Klaus claimed that they "needn't hurry to enter the Euro zone."<sup>6</sup>

As a member of the EU, The Czech Republic must adhere to EU financial regulations. The Czechs perceive the EU as a very "heavy-handed" regulator and generally (and culturally) tend to be resistant to such an approach. Additionally, the Czechs, in general, are suspicious of politicians and distrust the European Parliament and other EU organizations. This regulation from Brussels limits the Czech Government in some ways from developing innovative approaches to improve its Capital Markets.

---

<sup>6</sup> "The Baltic Course." The Baltic Course, 2010. Web. 11 Jul 2011.

**Czechs are generally distrustful of politicians and skeptical about the political process.**

There are two main political parties active in Czech Politics. The Czech Social Democratic Party (CSSD) is generally seen as a “center-left” party while the Civic Democratic Party (ODS), created by the current Czech President Václav Klaus, is generally perceived as a “center-right” party with a “eurosceptic” bent. Many Czechs are not passionately involved in politics, and a negative connotation is still attached to being a member of a political party. Many Czechs perceive there is not much difference between the two parties.

**The Czech Republic is facing the challenge of an aging population and legacy government obligations.**

The Czechs are facing similar demographic challenges as the United States. They have a population of just over 10 million that is aging and birth rates are declining. Their pay-as-you-go pension system is unsustainable as it is currently operated. Furthermore, their universal health care system is facing rising costs and a decreasing tax base.

**The Czech Economy is reliant on manufacturing and exports.**

The Czech Republic’s Export to Gross Domestic Product (GDP) ratio is approximately 80% with the auto industry comprising about 20% of GDP. Eighty percent of exports are destined for fellow EU countries, and two-thirds of all exports go to the German market. As such, Czech exports were hurt during the recent Financial Crisis.

The Czech Auto Industry produces about a million cars a year, quite a substantial number given a population of under 11 million people. The automotive sector employs over 120,000 people and accounts for 25 of the world’s 50 component manufacturers.

All of the major firms are foreign owned. The major auto manufacturers are Skoda (Volkswagen-Germany), Toyota Peugeot Citroën Automobile (Japanese-French Partnership), and Hyundai (Korea).<sup>7</sup>

### **The Economic Climate is slowly changing but may take one more generation.**

The average Czech citizen is risk averse. Under socialist rule, incurring debt was generally discouraged and no equity culture existed. Because the initial hasty privatization went so poorly, the average citizen felt cheated. Many locals believe that the wealthiest Czechs amassed their fortunes by questionable or unfair business practices. The average Czech citizen is not financially astute, with little interest in or understanding of capital markets. People are conservative and tend to deposit money in banks or even keep it at home. After bank deposits, Money Market Funds are the most popular investment options among Czech citizens. One person we interviewed estimated that up to 10% of the population keeps its cash at home and only 3% to 4% of the population invests in the market.

### **The Financial Sector and Banking System is very “conservative.”**

As stated earlier, the European Union (EU) is very influential -- approximately 85% of Czech financial regulations stem from the EU. The Czech National (Central) Bank is the bank regulator and serves a function similar to the Federal Reserve Bank in the United States. The EU is currently trying to gain greater supervisory power, but the Czech Government is trying to protect some of the independent oversight functions it currently performs.

The central government also has a Ministry of Finance that is tasked with creating a favorable environment for capital inflows. Additionally, the government is considering adjusting current laws to attract Foreign Direct Investment.

---

<sup>7</sup> Czech Republic. *Automotive Industry*. Prague, 2011. Web. 11 Jul 2011.

The existing government pension system does not facilitate capital market development because investments cannot be subject to downside risk. Pension assets are invested in government securities, thus, no funds flow to the capital markets.

The EU has nothing like Glass-Steagall Act, a law that was established in the US in 1933 that separated investment and commercial banking activities. (This law was repealed in the US in 1999, and this repeal is generally considered a major contributing factor to the financial crisis of 2007 - 2008). In the EU, banks can be involved in both investment and commercial banking. There are currently no restrictions in Czech Republic on foreign ownership of assets. Major Commercial Banks have been purchased by German, Austrian, French, Belgian, and Dutch Banks.

Czech banks have adopted very conservative lending postures, with 75% loan to deposit ratios and capital adequacy ratios of about 14%. Fee-based banking is very profitable in the Czech Republic. In fact, during the financial crisis, foreign owners of Czech banks withdrew capital to cover losses abroad.

Another interesting fact gleaned from our interviews was that Bearer Shares are common. Bearer Shares are defined as "An equity security that is wholly owned by whoever holds the physical stock certificate."<sup>8</sup> The issuing firm doesn't register the owner of the stock and transfers of ownership are not tracked. The bearer of the physical coupon can collect any declared dividends in person. This is a traditional practice that in today's economic environment allows ownership to be disguised.

---

<sup>8</sup> "Investopedia." Investopedia, n.d. Web. 11 Jul 2011.

## **The Czech Financial System is more Commercial Bank-based than Financial Markets-based.**

Most firms obtain financing from Commercial Banks. Interest rates are low and lending terms are attractive. If bank lending is not sufficient, businesses raise funds by issuing bonds, while an Initial Public Offering (IPO) remains the least popular option. The unpopularity of IPOs is a result of cultural based on historical experience and due to administrative burdens. Many business people fear losing control of a growing business and lingering skepticism remains as a result of the unsuccessful privatization of the mid-1990s. Businesses also avoid the administrative burden associated with listing on the stock exchange. Additionally, because few Czechs are invested or involved in the financial markets, there is little enthusiasm for listing a company on the stock exchange.

## **Czech Financial Institutions weathered the Financial Crisis of 2008.**

Due to conservative business practices, the Czech Banking Sector was not severely impacted by the Financial Crisis. Czech Banks generally rely on a fee-based model to generate revenue. The Czech Republic experienced its own crisis in late 1990s resulting in widespread bank re-structuring (and acquisition by larger European banks). The government created a “Bad Loan Bank” that administered troubled loans.

Additionally, Czech Banks have traditionally focused on basic retail and commercial lending with little exposure to exotic instruments like Mortgage-backed Securities or Credit Default Swaps. The delay of pension reform actually benefitted the banking system because there was no excess capital in search of a home. Bank capital adequacy ratios have remained high despite many foreign parent banks repatriating earnings to cover losses resulting from risky lending and investment elsewhere in Europe.

**The Prague Stock Exchange (PSE) is the “last resort” for access to capital. The majority of Investment Banks and Brokers operate regionally -- they don’t just focus domestically.**

The PSE has a great challenge if it aspires to be a leading provider of capital. The commercial banks, as discussed earlier, are “cash heavy” and can lend at attractive rates. Because Czechs rely on the government’s pay-as-you-go pension system, there is very little institutional money available to invest in the capital markets. For comparison, approximately 35% of Polish pension funds are invested in equities while only 2 to 3 % of Czech pension funds are invested in equities.

Twenty-seven companies are currently listed on the Prague Stock Exchange. The financial and materials sectors dominate and many of these companies are actually foreign companies that list on the Prague Stock Exchange as a secondary market. Only six or seven stocks are actively traded in significant volumes. Because of the limited liquidity, prices generally don’t reflect fundamental valuations, and the PSE index tends to move in tandem with global markets.

One broker described the PSE as “exhausted” and stated that clients are looking elsewhere for opportunities. This is one of the reasons that many of the Prague investment banks and brokers have been operating regionally as well as arranging trades on the large markets in London, Frankfurt, and New York. Even though liquidity, as expressed by trading volume, is an issue, the free-float is large enough and is not a major factor contributing to the illiquidity.

Some bankers mentioned that it might be attractive to privatize some of the assets that are still owned by the government. Some potential candidates mentioned were the airports, the national airline, the lottery company, and some utility companies.

## **The Prague Stock Exchange is not “truly” electronic.**

The Handbook of World Stock, Derivative, and Commodity Exchanges describes the PSE as having an automated trading system (known as AOS) based on automated processing of orders placed by member firms. During our visit, we learned that the PSE uses a Direct Market Access (DMA) Model, an electronic trading facility in which trading on the order book is restricted to broker-dealers and market-making firms that are members of the exchange. In practice, the majority of trades are negotiated among brokers and then input into AOS. Under this system, local brokers are protected. Remote access is available but a buyer or seller needs to contact a Czech Broker who is a member of the PSE to execute the trade. Most major stock exchanges operate under an “Order Book” Model in which buy and sell orders are matched via the automated trading platform.

One broker told us that the “Floor of (PSE) Stock Exchange” is the “last resort” when executing a trade. A large volume of their trades is executed more advantageously through other methods. They mentioned that large institutions in places like London don't have to go through the local market. These trades do not have to be reported to the PSE. Conversely, another broker mentioned that they “make a ticket” for all of their executed trades.

Wiener Börse, AG purchased ninety-four percent of the PSE in 2008. The Vienna, Budapest, Ljubljana and Prague Stock Exchanges comprise the Central and European Europe Stock Exchange Group (CEE). Since its acquisition, the PSE has adopted the Xetra® trading system for cash market securities and the Eurex® trading system for derivative products. These systems facilitate trading among CEE members, as well as throughout Europe.

The Czech Republic complies with the European Union Directive on Markets in Financial Instruments (MiFID) which defines the rules for investment activities in the



European Economic Area. Its objectives are to increase transparency, enhance competition, and improve investor protections.

Trades on the PSE clear through the Central Securities Depository (CSD). CSD maintains a central register of dematerialized securities issued in the Czech Republic and operates a settlement system. The Central Depository registers and settles trades and provides issuer services. The Central Depository is also a participant in the Clearstream Banking Luxembourg international depository and is a member of the European Central Securities Depositories Association (ECSDA).

In order to expand liquidity and access to capital, regional exchanges and a Europe-wide SME market are being contemplated.

### **Among Czechs, Poland seems to be the “financial standard.”**

Again and again, our discussions touched on the financial markets in Poland. Among many Czechs, Poles are perceived to be more entrepreneurial while Czechs were described as being “laid back.” The Polish Capital Markets were described as the standard among Eastern European Capital Market participants. The Polish government was a bit more cautious in its privatization initiatives in the 1990s. The majority of nationalized companies were sold to investors as part of private pension scheme through the Warsaw Stock Exchange. At the time, interest rates were high in Poland which made capital market funding a much more attractive option. As a result, Poland has a thriving stock exchange that includes active participation of Small and Medium Enterprises as well as active retail investors. Up to a third of market participants are estimated to be retail investors.

**There are many Influential Czechs, Organizations, and Social Groups that are not readily apparent to the outside observer.**

The greatest value of the team's visits is the opportunity to talk to key members of the Capital Market Network and determine the "structural holes" (both people and organizations) that exist in our initial model. The list below identifies "hidden nodes" that we identified and gives some short background information (Forbes Magazine and The Prague Post).

Many of these prominent Czech Citizens were mentioned over the course of our interviews. (Because of the unique relationship between the Czech Republic and the Slovak Republic, this list includes citizens of both countries.) It was readily apparent that these people wield a great influence over Czech society and Central Europe.

**Petr Kellner**: Insurance and banking magnate expanding energy holdings

**Zdenek Bakala** : Owns New World Resources, regarded as the biggest player on the coal market in Central Europe. Heavily invested in last Czech election in May 2010, supporting three center-right parties.

**Andrej Babis**: Owns agricultural food company, Agrofert Holding; looking to expand in Central Europe. Son of diplomat was born in what is now Slovak Republic; began as trader for Petrimex, precursor to Agrofert.

**Pavel Tykač**: head of Motoinvest, co-owner of Czech Coal

**Marek Dospiva**: head of Penta Investments

**Jaroslav Haščák**: owns one-third of Penta Investments

**Radovan Vítek**: founder of Czech Property Investments

**Mario Hoffmann**: owner of Salt Cay Estates Ltd. and Salt Cay Devco Ltd, Poštová Banka

**Jan Světlík**: holds 45 percent of Vítkovice Machinery Group

**Karel Komárek Jr.**: Chairman, KKCG-a multinational financial and investment group. It has focused on an ongoing basis on oil and natural gas, industry, finance, and investments. KKCG operates through its subsidiaries in Europe, Asia, North America, and Africa and has branches in 11 countries.

**Jitka Komárková**: co-owner of Bonatrans Holding, ŽDB and Kovosvit MAS

**Mária Blašková**: shareholder of Moravia Steel

**Jana Sobotková**: married to Petr Lukeš, founder of Cimex real estate group

**Lilia Lili**: co-owner of Exim Tours

**Eva Geržová**: third-largest shareholder of Pegas Nonwovens

**Radka Zachová**: co-manager of insurance company Media, on the board of GES investment group

**Petra Marschallová**: member of the management board of many companies of Ivan Zach, the co-owner of TV Prima

**Aida Peričová**: owns one-fifth of Slot Group

**Kateřina Janků**: head of Moravia IT

**Naděřda Krejčířová**: mother of Radovan Krejčíř, a fugitive Czech businessman hiding in South Africa, in control of Těšín printing works

**Karel Janecek**-RSJ Algorithmic Trading-a High Frequency Trading Firm. RSJ a.s. is the largest proprietary trader in the Czech Republic. RSJ trades financial derivatives with yearly notional trading volume exceeding of 2 quadrillion (2 million of billions) CZK. It is the largest trader on NYSE Liffe and is also a very active trader on the CME in Chicago.

We only heard one specific name of a foreign national who was influential, in this case a Russian who is #194 on the Forbes Billionaire List.

**Leonid Mikhelson**: Built independent gas company Novatek, which has large deposits in Yamal-Nenets region (northwestern Siberia). Mikhelson has proven to be complementary to state-owned CK Gazprom. In 2009, Gazprom bought nearly 20% of Novatek from Mikhelson and his partners.

It was mentioned to the team several times that the business network in the Czech Republic is very small. We were told that there is a very tight network among leading Chief Executive Officers, and we noticed that many of the senior business leaders had a background in law. Interestingly, we were told that there are only about 15 influential traders in the equities market; they all know each other and relationships range from cooperative to adversarial. (This interesting finding will be discussed in more detail later in this paper but the team will definitely be incorporating these individuals and organizations into our revised model.)

Our initial network model indicated the University of Economics at Prague is very influential organization. During the course of our interviews, we learned that this

institution taught the vital skills necessary for the market transition to capitalism, so graduates were well positioned to become influential members of the Czech financial sector. College connections are not as strong as they may be among the more prestigious schools in the US, however. We were told numerous times that there is no true alumni network.

An interesting commonality that many influential members of the network had was previously working for one of the firm's generally designated "the Big 4"; the four largest international accountancy and professional services firms (KPMG, Deloitte, PWC, and Ernst & Young). Based on our experience, we would probably add McKinsey to this group. These firms almost act as a feeder system to influential positions in the Czech Capital Markets.

Additionally, we asked many of the traders if there were clubs, pubs or other locations of social interaction within their social sphere of influence. We were told that some traders might meet at a bar but there were no specific locations and this was not a common occurrence and the numbers gathering tended to be small. Some in the financial sector mentioned that they might take clients golfing but this is nowhere near as common as it is in the US. Incidentally, golf is becoming more popular in the Czech Republic. In the late 90s, there were two clubs around Prague. Now the number is "more than 20 now-maybe too many for the local interest."

Interestingly, it appeared to us that many of the people in the financial sector are diligently pursuing Chartered Financial Analyst certification. This was mentioned by many people, and it appears that there is some social interaction at preparation classes that are taught locally in support of this designation.

Based on history and culture, the Czech Commercial Banking Sector is very influential. As mentioned before, Czech Banks are "universal" so some of these banks are very

involved in capital markets and trading. Others have decided to assume the more traditional role of a commercial bank.

The traditional trade and industry associations are present in the Czech Republic and the agents and organizations we interviewed were members but the influence and overt power of relationships developed within these organizations was downplayed. Some of these associations include:

- Czech Academy of Science
- Confederation of Industry of the Czech Republic
- Czech Banking Association
- Czech Capital Market Association
- Czech Chamber of Commerce
- Czech Insurance Association
- Association of Private Equity and Venture Capital Association

Football (Soccer) and Hockey are very popular in the Czech Republic but were not seen as an important factor in social networks either as a participant or spectator.

## **Entrepreneurial Climate**

When asked about entrepreneurship, Czechs generally give a wide range of responses and impressions. Some spoke of the strong entrepreneurial spirit and culture in the Czech Republic while others mentioned that they believed that it would take at least one additional “business generation” to get rid of the remnants of the socialist economy which included no incentives or avenues for a person to become an entrepreneur.

An entrepreneurial culture is emerging fostered by the Czech Tech University which offers courses in Biotech and Information Technology. It has an office in Silicon Valley, and Czech nationals hold patents for some of Google’s technologies.

Most business activity is financed by commercial banks. Local entrepreneurs rarely consider going public because bank financing is inexpensive and plentiful and owners often desire to retain control of their companies. Some distrust of the markets also remains following the difficulties with the government's initial privatization efforts. The European Union also finances economic development in member countries, with generous facilities for SMEs.

## **Private Equity and Venture Capital**

There is a relatively small number of Private Equity and Venture Capital Firms that operate in the Czech Republic. The team was able to interview people who represented both large international firms as well as firms that focus domestically on the Czech Republic.

The domestic-focus funds look at about 50 ideas or projects per year. These funds are, almost altruistically, also motivated in growing the domestic economy, but they also believe that larger than average returns are potentially available domestically. We were told that is more money is available to private equity funds than attractive projects. These domestic-focused funds are generally pooling money from successful domestic businessmen and capital accumulation is very networked based. Successful firms are able to attract capital based on the social capital of the firm's partners.

There are relatively few large firms in the Private Equity sector. The larger firms tend to have a more regional focus and are based in major financial centers such as London. In the course of our interviews, we were told that, because of the typical business model in these large firms, their deals tend to start at the \$100M range. Most of the capital raised by these firms comes from large institutions with much of it from Russia, the Middle East, and Asia. There's been a big push towards the development of photovoltaic projects in the Czech Republic and a lot of interest from Private Equity firms.

Over the past three to four years, the typical deal has been getting more standardized. We were told that the deals are rarely hostile at any level. Hostile deals become very difficult legally and the firms aim to set a positive atmosphere and create a productive environment.

Typically a large international firm will coordinate to purchase at least 80% of the company outright. The domestically-focused firms typically desire to purchase the entire company. The firm typically has a “target list” identifying attractive mid-sized firms that might have a management team that may be looking to exit for numerous reasons. Through their local network, the firms typically initially establish a cooperative relationship and then eventually develop a plan for eventual purchase of the firm.

It was emphasized that Private Equity firms tend not to be very aggressive. This type approach is not welcome in Czech culture and it is extremely important that the firms retain positive reputations in order to effectively operate in the Czech Republic.

**As might be expected Corruption sits on scale somewhere between that of a Frontier Market and that of a Developed Market.**

During our visits, we always attempt to understand the business environment and the impact of corruption on it. According to Transparency International, the Czech Republic has a rating of 4.6 on a 1 to 10 scale (0 means that a country is perceived as highly corrupt and 10 means that a country is perceived as very clean).<sup>9</sup>

One entrepreneur we spoke with mentioned that corruption is very open. Culturally (perhaps a remnant of the socialist past), people are proud to tell how they “beat the system.” Therefore, there is a lot of information in public and the media likes to focus on issues of corruption. Several people we spoke with mentioned that the majority of corruption dealt with issues around government procurement and political partners.

---

<sup>9</sup> "Transparency International: The Global Coalition Against Corruption." Transparency International, n.d.Web. 11 Jul 2011.



They also mentioned that regulators appear to be influenced by the political party in power.

We had an interesting discussion concerning foreign companies "importing" corruption; firms want to win contracts from either the government or private entities and offer bribes to win the contracts.

### **Lessons Learned-changes to model:**

The team will now revise the initial capital market model based on our meeting and interviews. The most important nodes that we will introduce into our model are the following:

- The leading Commercial Banks and their leadership teams
- The three Influential Czech Billionaires as well as other influential financiers, their organizations and leadership teams
- The leadership of the most heavily traded stocks on the PSE
- The leading Insurers in the Czech Republic

Based on these revisions, the team will publish a paper that quantitatively compares the initial model against the revised model. The team will also utilize this refined model as part of its larger effort of comparing Frontier Capital Markets against Emerging Capital Markets.

### **References:**

Czech Republic. *Automotive Industry*. Prague: 2011. Web. 11 Jul 2011.

"Investopedia." Investopedia, n.d. Web. 11 Jul 2011.

"Prague Stock Exchange." Prague Stock Exchange, 11 Jul 2011. Web. 11 Jul 2011.

"The Baltic Course." The Baltic Course, 2010. Web. 11 Jul 2011.

"Transparency International: The Global Coalition Against Corruption."  
Transparency International, n.d. Web. 11 Jul 2011.

United States. *Background Note: Czech Republic*. 2011. Web. 11 Jul 2011.

"Wiener Borse." Wiener Borse, 2011. Web. 11 Jul 2011.