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# Acquisition-driven IPOs

## *Theory and evidence in Central and Eastern Europe*

**SUMMARY:** Initial public offerings and acquisitions are decisive and unique events in a firm's life cycle. Motivations of private firms for going public have been broadly examined in recent decades and for a variety of reasons, the firm's short-term takeover strategy has been observed as an important motive for firms to perform an initial public offering. Extensive empirical research has been conducted lately to verify this statement, mostly relying on US and Western European data. In this paper we analyze the relationship between initial public offerings and acquisitions in Central and Eastern Europe. We find evidence that newly public firms on the Polish stock market have increased acquisition activity while this relation is weaker in the Czech Republic, Hungary and Slovenia. We also identify major characteristics of the regional financial system and stock markets which serve as possible explanations for our results.

**KEYWORDS:** Acquisitions; Initial Public Offerings; Central and Eastern Europe; M&A; IPO

**JEL CODES:** G32, G34

This paper investigates the topic of initial public offerings (IPOs) and acquisitions. Both activities entail external assets, people or capital becoming internalized in the company, either by new owners claiming their place among the company's proprietors or by the arrival of new assets and opportunities. Both events might often involve broad public attention. A number of relevant questions could be raised within this topic, but the one we are most interested in is whether there is a strong correlation between these events, or more precisely, do firms choose public equity financing to pave the road for future acquisitions?

Corporate finance literature widely addresses the topics of IPOs and M&A transactions; however linking them together and investigating their connection is a relatively new research topic. Empirical studies have been conducted recently to verify this causality,

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but most of these papers rely on US corporate control and stock markets, some of them deal with large economies among G8 countries or Western-Europe, but much less investigation has been performed on Central and Eastern European markets.

After providing an overview of the existing literature that describes acquisitions as driving forces of IPOs, our goal is to investigate whether the presented theories are valid in Central and Eastern Europe. We formulate the following research questions for the empirical work.

**RQ#1:** The literature provides convincing evidence of a connection between IPOs and the subsequent M&A activity of firms (or in short: acquisition-driven IPOs) in Western Europe and peculiarly in the USA. Can such evidence be found in the Central and Eastern European region?

Do CEE firms *perform more acquisitions* after the IPO than prior to it?

Do CEE firms *spend more capital on acquisitions* after IPO than prior to it?

Do a large proportion of IPO firms engage in M&A activities?

**RQ#2:** What factors encourage firms to perform or discourage firms from performing acquisition-driven IPOs in Central and Eastern Europe?

The structure of the paper is the following. In section 2 we provide theoretical background and elaborate on the acquisition motive of IPOs. In Section 3 we present the data and the methods we used for analysis. Section 4 contains the data-based results on acquisition intensity of IPO firms in the investigated region. Section 5 enumerates the factors that specifically influence the acquisition-driven IPO decision of firms in Central and Eastern Europe. The last section concludes.

## THEORETICAL BACKGROUND

In this chapter we review the existing international literature on acquisitions as driving forces of IPOs. IPOs might facilitate a firm's acquisition activity in three ways. First, the IPO provides the company with disposable funds. Second, via an IPO the company converts its stock to an acquisition currency which might be efficiently used as payment in subsequent mergers. Third, the IPO resolves the valuation uncertainty about the company, which may also have several advantages.

### Cash-infusion hypothesis

IPOs can facilitate mergers and acquisitions via the primary proceeds a firm realizes from the sale of its equity to investors. An IPO can also grant the firm better access to capital and debt markets, as public companies have

better opportunities to issue bonds and have enhanced bargaining power towards banks. This better access includes the possibility of fundraising via secondary equity offerings (SEOs) and the better loan or bond issue conditions of a public firm. It is notable, however, that not all IPOs involve a primary market component; therefore not all IPOs are associated with initial cash infusions for the firm itself.

*Celikyurt et al.* (2010) performed an extensive analysis on a 20 year long list of 1,300 company IPOs in the US. They report that IPOs appear to facilitate M&A both by providing an infusion of capital and by providing ongoing access to capital markets. Their research points out that firms with higher than median IPO proceeds spend 48% of their market value on acquisitions in the first five years after going public, while firms with lower IPO-revenue spend only 11% of their market value on M&A. Furthermore, the volume of cash-financed acquisitions is strongly and positively correlated with the debt capital obtained after the IPO: going public enhances a firm's ability to borrow.

*Hovakimian and Hutton* (2010) also performed a study on a large sample of US firms, linking IPOs, IPO and firm characteristics and mergers and acquisitions. In contrast to several other studies, they tracked M&A activity within a three year period after the IPO. The authors confirm that newly public firms enter the market for corporate control rather as acquirers than targets. They argue that mergers which closely follow IPOs are more likely to be financed by cash and larger IPO proceeds significantly increase the likelihood of a subsequent acquisition. Hovakimian and Hutton (2010) found that the easier it is for the firm to sell debt (equity) after becoming public the greater the likelihood of cash (stock) acquisitions, which corroborates the IPO cash-infusion hypothesis.

*Bessler and Zimmermann* (2012) conducted a study on 2,679 IPOs in Europe within the time frame of 1996-2010. They report that 22% of the investigated companies have performed acquisitions within five years after their IPO date, and these firms have spent an average of 65% of their pre-IPO market value on acquisitions. However, taking into consideration all companies in the sample (not only those becoming acquirers within five years), an average *Western-European* firm spends 16.23% of its pre-IPO market value on acquisitions compared to 44 and 13.25 per cent respectively on CAPEX and R&D (organic growth). This implies that for an average *Western-European* firm, CAPEX is the most important means of growth.

#### Acquisition currency hypothesis

Overvaluation of the bidder firm might have a significant impact on M&A activity. If at a certain time the bidder's equity is overvalued, it could efficiently use it as a currency to finance an acquisition. Furthermore, overvalued stock might enable the company to acquire larger and/or qualitatively different targets, which firms would not be within reach for a private or undervalued company. Overvaluation can also drive IPOs: at times of optimistic investor mood and rapid market growth, more firms enter the public equity market and also perform more acquisitions subsequently compared to other times. As reported by Schultz and Zaman (2001), during the Internet boom in the late 1990s Internet firms were rushing to go public to grab market share by acquiring other Internet companies. Shleifer and Vishny (2003) conclude that firms with overvalued equity are able to make acquisitions, survive and grow, while firms with undervalued stock might become takeover targets. In his research Friedman (2006) came to the

conclusion that company overvaluation plays a more significant role in the case of equity-financed transactions than in cash-financed ones. As presented earlier, Brau and Fawcett (2006) found that creating public shares for use in future acquisitions is one of the main motivations of private firms going public in the US.

*Celikyurt et al.* (2010) found that IPO underpricing has a positive effect on stock-financed acquisitions in the first two years after the IPO. Furthermore, they also found empirical evidence that in the long term, stock overvaluation has a positive impact on stock-financed acquisition activity.

According to Hovakimian and Hutton (2010), stock returns are strongly and positively associated with post-IPO merger activity, especially for stock-financed acquisitions. Consistently, high market valuation tends to increase the rate of stock in acquisition financing. They also established that IPO-underpricing negatively correlates with cash mergers and positively with mixed and stock-mergers. Hovakimian and Hutton (2010) also found evidence that the willingness of a target to accept stock as a method of payment increases with acquirer stock liquidity and declines with the extent of information asymmetry about the acquirer. Furthermore, private acquisition targets tend to accept more cash payments while public targets are more likely to accept stock as payment.

Bessler – Zimmermann (2012) conclude that in (Western) Europe firms rely more on external growth, especially via stock-financed acquisitions in acquisition-intensive and in high-growth industries, while organic growth is more important in less acquisition-intensive industries. They found evidence that in Europe, just as in the US, IPO-underpricing (reflecting probable overvaluation of the firm's equity) positively affects share-financed acquisitions.

*Gajewski and Gresse* (2006) investigated IPO-underpricing in numerous European stock markets and found significant differences among countries. The average underpricing is higher in Europe compared to US levels. Underpricing in Poland during the 1990s was measured to be 21.78% - 28.83% (Gajewski and Gresse, 2006). Compared to this, the average underpricing level in the US during 1980-2001 was 18.8% (Ritter and Welch, 2002); however excluding the period of 1999-2000 this number drops to close to 10%. Higher underpricing might facilitate stock-financed acquisitions in the region.

### Valuation uncertainty hypothesis

The third possible motive in acquisition-driven IPOs is valuation uncertainty, often referred to as market feedback hypothesis. By going public, a private firm is not only able to collect cash or create an acquisition currency but also learns its market value. Being aware of the actual market valuation, the management can better estimate potential benefits of M&A transactions, therefore exercise a more rational acquisition strategy and also acquire a broader group of target companies.

*Hsieh et al.* (2011) developed a real option model in a neoclassical world of rational investors and efficient markets without information asymmetries. The basis of their model is that a private firm not aware of its precise value is not able to make optimal restructuring decisions. This uncertainty leads to a suboptimal M&A strategy and reduces firm value. An IPO dissolves valuation uncertainty, therefore allowing the firm to perform an efficient acquisition strategy and enabling an optimally exercised restructuring option. Hsieh et. al. (2011) also found that the likelihood of observing a merger within five years of an IPO increases in the positive valuation surprise re-

alized at the time of IPO, increases in the cost of the IPO and decreases in the valuation uncertainty prior to going public. Furthermore, the time between an IPO and a subsequent merger decreases in the positive valuation surprise realized at the time of IPO, decreases in the cost of the IPO and increases in the valuation uncertainty prior to going public. It is notable however, that in their model only valuation surprise and valuation uncertainty were statistically significant variables.

### RESEARCH METHOD AND DATA

Following Hovakimian and Hutton (2010) and also considering the time frame of available data we decided to track three years of acquisition activity of IPO firms and following Celikyurt et al. (2010) we are monitoring these activities both before and after the IPO, to make a comparison. As an example, if a company went public on 02/15/2008, M&A activities of this company will be tracked between 02/15/2005 and 02/15/2011. Our research involves investigating nine years' acquisition activity, beginning with 01/01/2004 and ending on 12/31/2012. As a result, we are able to monitor three full years of IPO activities. The time structure of the dataset is represented in *Chart 1*.

The list of acquisitions (both count and value) is taken from the DealWatch database of Emerging Markets Information Service (EMIS). We have filtered the transactions according to the buyer firm's country of origin. The decision on the length of the investigated time frame was influenced by M&A data availability. M&A data are recorded in the database starting from 1999/2000 and they last until the time of our data download (2013); however until 2004 there is a significantly lower amount of transactions recorded in the list compared to 2004–2013. Therefore, only

TIME STRUCTURE OF DATASET								
2004	2005	2006	2007	2008	2009	2010	2011	2012
IPOs out of scope			Investigated IPOs			IPOs out of scope		
Investigated mergers and acquisitions of IPO firms								

Source: own editing

approximately nine years are available with a reliably high amount of M&A transactions.

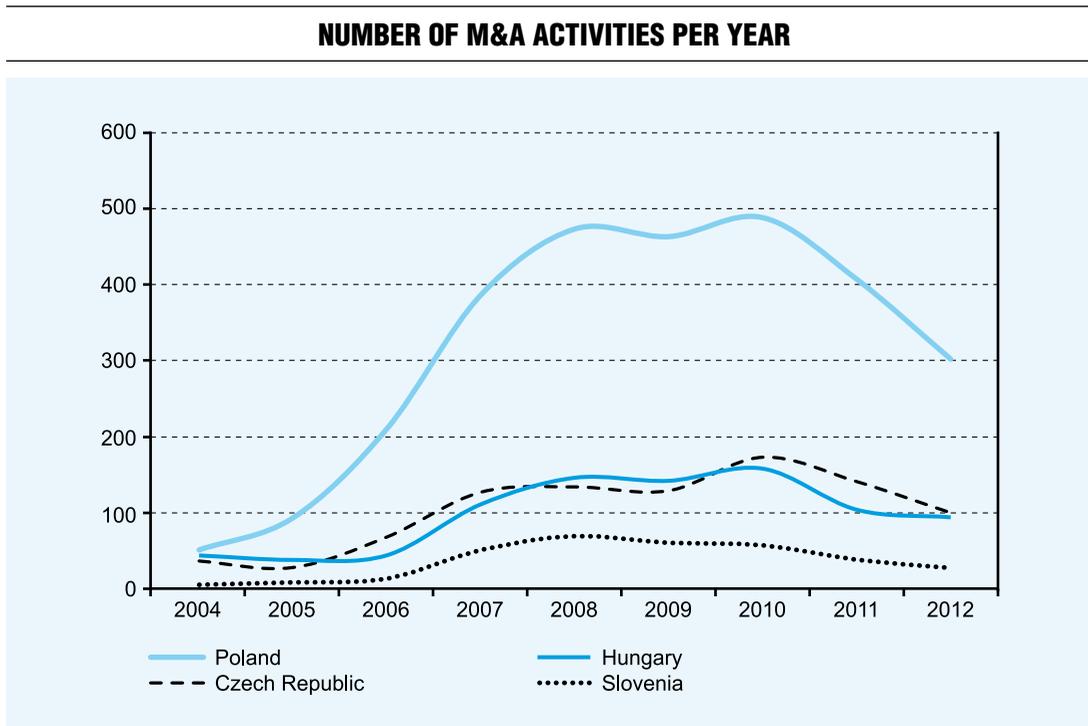
The list of acquisitions contains different types of M&A activities. In the study, acquisitions were only taken into account if the bidder company has acquired a minimum of 45% of the target’s shares. As the DealWatch database also contains acquisitions of larger real estate and land plots we took into account only purchases of business entities. We did not use a minimum deal size; however for a certain amount of transactions deal value is not publicly available. In such cases, following Celikyurt et al. (2010) a replacement value of zero has been used. This causes loss of information and a potentially substantial understatement of post-IPO acquisition activity of firms.

We have collected the number and value of acquisition activities (transactions matching the above set criteria) by means of manual collection, indicating the number and value of M&A transactions for each firm one, two and three years before and after the IPO date. The IPO data (IPO dates and company names)

are taken from the official websites of each country’s stock market in addition to publicly available information. IPO companies are taken from four countries into the sample: the Czech Republic, Hungary, Poland and Slovenia. In the four sample countries there were 152 IPOs during the time frame of 2007–2009. In Poland there were 129 IPOs; in Hungary this number is 11, while there were seven IPOs in Slovenia and five in the Czech Republic.

In the DealWatch database 5,018 mergers and acquisitions were registered throughout 2004–2012 in the four countries. More than half of the transactions (2,873) were Polish. The yearly distribution of the transactions sorted by country is demonstrated in *Chart 2*. It is notable that the number of mergers and acquisitions increases until 2008 in all of the chosen countries, then stagnates until 2010 and afterwards steadily decreases until the end of 2012 where the dataset ends. It has to be taken into account that the economy of Central and Eastern Europe has been in a downturn since mid-2008, which means that the

Chart 2



Source: EMIS DealWatch database, own editing

time period under investigation is split into two halves: pre- and post-crisis. However, the fact that IPOs are investigated between 01/01/2007 and 12/31/2009 results in the fact that both pre- and post-crisis issues are involved in the investigation, alongside both pre- and post-crisis mergers (2004–2012).

It is apparent that Poland is a larger market considering both IPOs and M&A activities compared to any other investigated country. It means that combining the results of the four countries would cause the loss of important information regarding the three other smaller states. Therefore the four countries are divided into two groups in the presentation of the results: Poland alone and Czech Republic-Hungary-Slovenia together.

Two Polish IPO firms, Petrolinvest SA and Cyfrowy Polstat SA have been excluded from the sample due to the extremely high value of their performed acquisitions. After this

step 127 Polish IPO companies remain in the sample. Furthermore, two Czech IPO firms, ECM Real Estate Investments AG and Pegas Nonwovens SA have been included, even though they performed IPOs on 12/7/2006 and 12/18/2006.

### ACQUISITION INTENSITY OF IPO FIRMS IN CENTRAL AND EASTERN EUROPE

This section (RQ#1) explores whether the intensity of acquisition activity of firms increases after IPO in the selected countries. We investigate this along three different measures. In section 5.1 we analyze the number of acquisitions performed before and after the IPO. Then we examine the value spent on acquisitions during pre- and post-IPO periods in section 5.2. Finally, section 5.3 explores the proportion of IPO firms engaging in M&A activities.

### Do CEE firms perform more acquisitions after IPO than prior to it?

As *Table 1* illustrates, Polish IPO firms have performed 103 acquisitions in their first three years after becoming public, which might be compared to 17 acquisitions in the preceding three years, representing an increase of 505.9%. The first year after the IPO is an important period as 47 (45.6%) of the total 103 post-IPO transactions were conducted within this interval. It is worth noting, furthermore, that an average of 0.81 acquisitions fall on one IPO in Poland, taking into account deals conducted within three years post-IPO.

After performing a similar comparison in the Czech Republic, Hungary and Slovenia (CZ-HU-SI) it is apparent in *Table 2* that firms in these three countries performed 13 acquisitions within three years after IPO. Comparing this to the seven transactions in the preceding three years it accounts for an increase of 85.7%. Albeit quite substantial, this figure falls far behind the increase registered in Poland. The post-IPO average count of 0.57 transactions per IPO is also smaller than in Poland, which was not the case in the pre-IPO period. Another difference

is that acquisition activity in the second year does not drop after the first year's high in CZ-HU-SI – it increases slightly.

According to our first measure of transaction count, we could pronounce that the event of the IPO is followed by a noticeable increase in acquisition activities in both of the selected sub-regions, although this effect seems to be much stronger in Poland. It has to be noted, however, that the cardinality of post-IPO acquisitions in the three smaller states is generally low; therefore acquisitions performed by few firms can notably affect trends relating to the whole region.

### Do CEE firms spend more capital on acquisitions after IPO than prior to it?

As shown in *Table 3*, 1,184.86 million EUR has been spent on acquisitions in Poland after IPO (taking into account only those transactions where deal value was available and excluding Petrolinvest SA and Cyfrowy Polstat SA) representing an increase of 309.5% compared to 289.34 million EUR in the pre-IPO period, which is a rather marked difference. It is still

*Table 1*

**CUMULATED NUMBER OF ACQUISITIONS BEFORE AND AFTER IPO IN POLAND**

Time frame	Number of transactions	Avg. number of transactions per IPO
Preceding 3 yrs.	17	0.13
Preceding 2 yrs.	16	0.13
Preceding 1 yr.	9	0.07
IPO		
Subsequent 1 yr.	47	0.37
Subsequent 2 yrs.	66	0.52
Subsequent 3 yrs.	103	0.81
Total number of firms (IPOs)	127	

Source: own editing

Table 2

**CUMULATED NUMBER OF ACQUISITIONS BEFORE AND AFTER IPO IN CZECH REPUBLIC, HUNGARY AND SLOVENIA**

Time frame	Number of transactions	Avg. number of transactions per IPO
Preceding 3 yrs.	7	0.30
Preceding 2 yrs.	6	0.26
Preceding 1 yr.	2	0.09
IPO		
Subsequent 1 yr.	5	0.22
Subsequent 2 yrs.	11	0.48
Subsequent 3 yrs.	13	0.57
Total number of firms (IPOs)	23	

Source: Own editing

Table 3

**CUMULATED VALUE OF ACQUISITIONS BEFORE AND AFTER IPO IN POLAND**

Time frame	Value of transactions (mn EUR)	Avg. value of transactions per IPO (mn EUR)	Average transaction size (mn EUR)
Preceding 3 yrs.	289.34	2.28	17.02
Preceding 2 yrs.	225.86	1.78	14.12
Preceding 1 yr.	172.72	1.36	19.19
IPO			
Subsequent 1 yr.	538.91	4.24	11.47
Subsequent 2 yrs.	633.58	4.99	9.60
Subsequent 3 yrs.	1184.86	9.33	11.50
Total number of firms (IPOs)	127		

Source: Own editing

smaller than the similar figure for the number of acquisitions from the previous subsection (505.9%). The reason for this is that the average transaction size decreased (from 17.02 to 11.50 million EUR) after the IPO. It must be remembered though that some value data points were missing and therefore replaced with zeros, which fact biases these previous

calculations. Regarding the value spent on acquisitions during three years post-IPO it is again apparent that the first year is the most salient since 45.5% of it was spent within the first year. This is practically equal to the similar ratio in transaction counts. The average value of transactions per IPO exceeds 9 million EUR in the subsequent three year period.

Table 4

**CUMULATED VALUE OF ACQUISITIONS BEFORE AND AFTER IPO IN CZECH REPUBLIC, HUNGARY AND SLOVENIA**

Time frame	Value of transactions (mn EUR)	Avg. value of transactions per IPO (mn EUR)	Average transaction size (mn EUR)
Preceding 3 yrs.	79.67	3.46	11.38
Preceding 2 yrs.	62.62	2.72	10.44
Preceding 1 yr.	15.00	0.65	7.50
IPO			
Subsequent 1 yr.	132.67	5.77	26.53
Subsequent 2 yrs.	149.23	6.49	13.57
Subsequent 3 yrs.	159.23	6.92	12.25
Total number of firms (IPOs)	23		

Source: Own editing

Looking at *Table 4* we could say that the value of transactions after the IPO in the CZ-HU-SI region increased by nearly 100% to reach 159.23 million EUR. This increase exceeds the similar figure in transaction count (85.7%, as seen in the previous subsection), meaning that unlike in Poland, in this region the average value of a transaction slightly increased (from 11.38 to 12.25 million EUR). The average value of transactions per IPO still falls behind that in Poland after the IPO, accounting for 6.92 million EUR.

Taking values into consideration, the first year is by far the strongest among these countries (which was not apparent based on transaction number). In the second and third years the acquisition value falls back to pre-IPO levels. Nonetheless, it is also observed that the first year value increase in the CZ-HU-SI region is strongly affected by a 119 million EUR transaction performed by ECM Real Estate Investments in Czech Republic: during the first year after the IPO the company bought a large shopping mall in China. Without this transaction the trend in acquisition value would become

flat in this sub-region, which does not corroborate the expected result that firms spend more capital on acquisitions post-IPO.

Our second measure of transaction values at first glance promotes a similar conclusion to that of the previous section, namely that acquisition activity substantially increases after the event of the IPO, and this effect is more articulate in Poland than in the other three countries. But after removing an outlier acquisition of 119 million EUR in the first subsequent year from the CZ-HU-SI sample, the inference loses validity in these three countries, given that post-IPO values fall short of pre-IPO figures (79.67 million EUR beforehand compared to 40.23 million EUR afterwards).

**Do a large proportion of IPO firms engage in M&A activities?**

The acquisition-driven IPO hypothesis would be more convincing if we found that not only more deals take place in terms of number or value, but also that more firms engage in M&A

Table 5

**CUMULATED NUMBER OF FIRMS PERFORMING ACQUISITIONS BEFORE AND AFTER IPO IN POLAND**

Time frame	Number of firms	Percentage of all IPO firms
Preceding 3 yrs.	13	10.2%
Preceding 2 yrs.	12	9.4%
Preceding 1 yr.	9	7.1%
IPO		
Subsequent 1 yr.	28	22.0%
Subsequent 2 yrs.	35	27.6%
Subsequent 3 yrs.	50	39.4%
Total number of firms (IPOs)	127	

Source: *Own editing*

activity. *Table 5* suggests that this is true in Poland, where the number of firms performing at least one acquisition increased by 284.6% from 13 to 50, using the same three-year windows as before. The first year after IPO plays an important role, again showing that 56% of firms (28 of 50) entered into an acquisition within one year. In the three-year horizon after the IPO 39.4% of all companies performed an acquisition as a bidder.

Results are similar for the smaller sample of the CZ-HU-SI region, as seen in *Table 6*. The increase in the number of firms is exactly 200%, growing from three to nine. This latter nine amounts for 39.1% of all IPO firms, a figure very close to the Polish ratio. Among the acquiring firms the majority entered into an acquisition within the first year (55.5%); only the rest waited until the second or third year.

Based on our third measure, the number of firms engaging in an acquisition before and after the IPO, we could observe that the results are similar in both sub-regions: over 39% of newly public firms entered the M&A market as a buyer within three years after the IPO.

Compared to the results of Celikyurt et. al. (2010) who found that 31% of IPO firms

in the US conduct at least one acquisition within the IPO year, the evidence is weaker in Central and Eastern Europe: 22% and 21.7% of regional IPO firms, respectively, acquired within one year after the IPO.

The effect is also weaker in the three-year horizon: 65.1% of the US firms became acquirers while only 39.3% of the Central and Eastern European firms performed acquisitions within three years after the IPO. It has to be noted, however, that the research of Celikyurt et. al. (2010) takes into account only IPOs above 100 million dollars in 2004 value, while this current research covers all IPOs regardless of size. According to Bessler and Zimmermann (2012), acquisition activities are lower for smaller IPOs.

A further interesting aspect is the European context. In the research of Bessler and Zimmermann (2012), 22% of European IPO firms have completed at least one acquisition within five years after going public. Compared to this, the ratio of 39.3% in Central and Eastern Europe (39.4% in Poland, 39.1% in the other three countries, and only within three years, not five) is substantially larger, meaning that the IPO-acquisition connection might be stronger.

Table 6

**CUMULATED NUMBER OF FIRMS PERFORMING ACQUISITIONS BEFORE AND AFTER IPO IN THE CZECH REPUBLIC, HUNGARY AND SLOVENIA**

Time frame	Number of firms	Percentage of all IPO firms
Preceding 3 yrs.	3	13.0%
Preceding 2 yrs.	3	13.0%
Preceding 1 yr.	2	8.7%
IPO		
Subsequent 1 yr.	5	21.7%
Subsequent 2 yrs.	8	34.8%
Subsequent 3 yrs.	9	39.1%
Total number of firms (IPOs)	23	

Source: *Own editing*

**FACTORS AFFECTING ACQUISITION-DRIVEN IPOs IN CENTRAL AND EASTERN EUROPE**

To understand the connection between stock markets and the corporate control market in Central and Eastern Europe, the need for an analysis of the regional financial and capital markets arises, alongside understanding corporate governance characteristics. We identified seven different factors that influence acquisition-driven IPOs in the region. The financial system, market size, regulatory burdens, stock market and IPO characteristics have adverse effect on our investigated topic, while cross-listing possibilities and capital structure of regional firms are reinforcing factors.

**FINANCIAL SYSTEM** The main reason why findings based on the US markets cannot be fully applied to Central and Eastern Europe is that in continental Europe a different financial system has developed. This is a factor that weakens the intention of firms to perform acquisition-driven IPOs in CEE. While in the United States capital markets play a dominant role in corporate financing, banks play a more significant role in continental Europe. Iorgova and Ong (2008) report that the early entry of

foreign banks into most of the countries in the Central and Eastern European region together with privatization of state-owned banks gave the banking sector a leading role in funding the corporate sector. Central and Eastern European countries have less developed equity markets compared to common law countries, but also compared to Western Europe. This means that fewer firms are able to participate in stock markets and gather funds for subsequent acquisitions.

It is notable that the region's countries have actively developed their local capital markets in recent years. The accession of most of the region's countries to the European Union in 2004 has increased foreign interest in the local stock and bond markets. However, liquidity of the equity and bond markets still remained low in the region compared to more mature capital markets.

**MARKET SIZE** A further important aspect that adversely affects the acquisition-driven IPO hypothesis in Central and Eastern Europe is the small market size. Countries like the Czech Republic, Slovakia, Hungary, and the states of former Yugoslavia or Romania are smaller economies than Western-European states such

as Germany, the United Kingdom or France. Capital markets and stock markets are weaker and narrower in these countries. The exception is Poland, the economy of which is undoubtedly larger than that of other CEE transition countries. Regarding stock market capitalization Deutsche Börse is close to nine-fold the size of the Warsaw Stock Exchange; however the multiplier compared to Prague Stock Exchange is 45, and to the Ljubljana Stock Exchange it is 242.

**REGULATORY BURDENS** also hinder firms from efficiently gathering funds from the equity market. *La Porta et al.* (1997) found that in countries where shareholder protection is low, raising external equity finance is more expensive, which connection is observable in the US and continental Europe as well. They report that on all measures, common law countries provide companies with better access to equity finance than countries of other systems. A slightly different aspect is observed by Stringham et al. (2008), who report that the lack of sufficiently fast regulatory work hinders many small firms from performing an IPO in the Czech Republic.

**STOCK MARKET CHARACTERISTICS** *Claessens et al.* (2000) describe stock markets in transition economies having low market capitalization and low market turnover. These might act as discouraging factors in firms performing acquisition-driven IPOs. In addition, a small number of firms dominate most regional stock exchanges and the largest firms tend to cross-list to foreign exchanges, deteriorating local stock exchange positions. According to Iorgova and Ong (2008), among emerging European markets only Poland, Hungary, the Czech Republic, Russia and Turkey have been able to establish relatively liquid stock markets. However, relatively low liquidity is still one of the main reasons preventing many international investors from participating in regional stock exchange trading. This serves as

a reason for many larger regional companies to cross-list in an attempt to tap more liquid foreign equity markets.

Regional stock exchange cooperation such as the CEE Stock Exchange Group (CEESEG) might strengthen local capital markets. By reaching out to a larger group of investors, a wider range of companies can seek public equity via the stock exchanges. It has to be acknowledged, however, that members of the CEESEG are still awaiting most of the above mentioned benefits of their cooperation.

**IPOs IN THE REGION** European firms performing an IPO are generally more mature: smaller and younger firms are less likely to go public compared to the United States. *Degeorge and Maug* (2006) developed three explanations for this phenomenon: 1) Europe has weaker investor protection, 2) IPOs are overpriced in the US, creating a strong incentive to go public, 3) falling cost of capital has led to more IPOs in the United States compared to Europe. In addition, the count of IPOs is generally lower in the Czech Republic, Hungary and Slovenia than in Poland, as seen in the previous section. It is interesting, however, that there are major differences among the three smaller states. While the Prague Stock Exchange is the second largest in the CEESEG (Vienna being the largest), it accounts for the lowest number of IPOs during 2007–2009. Comparing the number of IPOs to stock market size, the Budapest Stock Exchange stands in the middle among the three states, while the Ljubljana Stock Exchange seems to best facilitate IPOs, even overtaking the WSE in Poland (even though in relative, not absolute terms).

**CROSS-LISTING POSSIBILITIES** Contrary to the above factors, the ability of newly public firms to cross-list is an encouraging factor for them to perform acquisition-driven IPOs. Cross-listing facilitates future acquisitions in

the chosen country because target shareholders might prefer payment with domestically traded equity. *Tormunen and Torstila* (2005) document that European companies listing in the US are more likely to perform acquisitions in the US, and they are more likely to pay by stock for these acquisitions than firms of the same origin that are not cross-listed. According to *Korczak and Bohl* (2005) the limited liquidity and low capitalization of CEE stock markets might have served as primary reasons for Central and Eastern European companies to cross-list, particularly in the mid and late 1990s, when large privatization and private sector IPOs and SEOs were often partially placed in foreign markets. *Claessens et al.* (2000) point out that the average size of cross-listed companies from all CEE countries is 12 times larger than companies listed only domestically, which signals that local markets are too small to provide large firms with sufficient levels of financing and liquidity.

**CAPITAL STRUCTURE** *Delcoursé* (2007) investigated determinants of capital structure in transitional economies and found that a “modified pecking order” theory can best describe capital structure choices of firms in CEE countries. As opposed to the original pecking order theory, regional firms prefer equity financing over debt capital, while retained earnings still remain the primary choice. According to her results, managers prefer equity to debt financing because it does not have to be paid back.

*La Porta et al.* (1997) reported that the average private sector debt as a share of GNP is 68 per cent in common law countries, 45 per cent in French civil law countries and 97 per cent in German civil law countries. Accordingly, indebtedness is highest in countries with Germanic systems, which states might also be described as bank-focused financial systems. Contrary to the above figures, corporate bond

markets are generally underdeveloped in Central and Eastern European states. This means that firms should either choose bank loans or equity funding as financing options and only few firms might efficiently build on the option of bond financing.

## CONCLUSIONS

In this paper we investigated the hypothesis of acquisition-driven IPOs in Central and Eastern Europe. We analyzed 5,018 acquisitions in the time frame of 2004-2012 and 150 IPOs during 2007-2009 in the Czech Republic, Hungary, Poland and Slovenia. We examined the acquisition activity of IPO firms using three measures, such as number of acquisitions, value of acquisitions and number of acquiring firms. We also gathered regional characteristics which might serve as root causes of the received figures.

Our results show that the largest regional stock market, the WSE in Poland acts as a catalyst for firms willing to go public to perform acquisitions. Both the number and value of transactions and the number of acquiring firms have increased substantially after the IPOs. On the other hand, the Czech Republic, Hungary and Slovenia do not show unequivocal trends. The number of acquiring firms has increased substantially, the number of post-IPO transactions grew only moderately and the value of transactions even decreased after excluding an outlier. In addition, the cardinality of observed transactions is low as well in these countries.

Compared to studies on US data (*Celikyurt et al.*, 2010) our results show a lower ratio of firms becoming acquirers within three years after IPO, although we found slightly stronger evidence for the connection between IPOs and acquisitions compared to *Bessler and Zimmermann* (2012) in Western-Europe.

We can conclude that the increase of the investigated firms' acquisition activity means that IPOs have a positive effect on subsequent acquisitions in the region. However, this result does not explicitly mean that acquisition was the main motive for these firms to perform an IPO. Neither does it mean that external growth via M&A outpaces expenditures on organic investments by these firms. Consequently, there are still topics which we have not yet touched on and which are worth investigating. It calls for further research to examine whether regional firms considered internal or external growth opportunities pre-

dominant when it came to the investment of their initial IPO proceeds. A further research topic could be the extent to which IPO proceeds were used to reduce firms' existing leverage. Acquisition payment types and their connection to IPO and firm characteristics might also be evaluated to deepen the received insight. Nevertheless our work points out that the topic is worthy of investigation from a regional perspective as well. The largest of our analyzed economies, Poland, corroborates the internationally established theory while our other three investigated states did not offer satisfactory evidence.

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