

Materiality of Intangible Assets in Business Companies in the Czech Republic

Hana Bohusova*

Department of Accounting and Taxes, Faculty of Business and Economics, Mendel University in Brno, Czech Republic

Patrik Svoboda

Department of Accounting and Taxes, Faculty of Business and Economics, Mendel University in Brno, Czech Republic

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ABSTRACT

Due to the technical and scientific progress, the cost structure of business entities changes significantly. An important item of costs are those associated with intangible assets such as software, patents, licenses, copyrights and goodwill. We can assume that the share of these assets in total assets of companies has changed over time. The paper is focused on the evaluation of the share of intangible assets in total assets of listed entities in the Czech Republic. The analyzed sample of companies represents entities preparing financial statements in accordance with IFRS. The sample covers period after the mandatory implementation of IFRS - starting in 2005 and ending in 2015. The aim of this paper is to evaluate the share of this category in assets of companies, its structure and its changes over time and to identify possible reasons for this situation. The analysis revealed that there is an increasing tendency in volume of IAs in companies listed in Prague Stock Exchange. Any common relation between a volume of IAs and the economic growth was not confirmed.

Keywords: Intangible Assets, Fixed Assets, GDP, Goodwill, IFRS.

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1. INTRODUCTION

The characteristics of the economy changed from the industrial one to today's more service and information oriented during the past decades. Intangible assets (IAs) are one of the most significant factors influencing the development and success of corporations in the market economy in the recent days. These assets without material substance become the main impetus in the creation of value in corporations. Much of the attention on IAs has been paid to research and development (R&D), and software. But the range of IAs is broader. OECD (2008, 2011) groups intangibles into three types: computerized information (such as software and databases), innovative property (such as scientific and nonscientific R&D, copyrights, designs, trademarks) and economic competencies (including brand equity, firm-specific human capital, networks joining people and institutions, organizational know-how that increases enterprise efficiency, and aspects of

advertising and marketing). These assets are getting such important, and their identification and measurement have become a point of high interest of all financial statements users, despite the fact that tangible assets often have been dominating to discussions of success factors up to now. It is clear that such tangible factors explain only part of the outcome, and for complete comprehension, organizations need to consider intangible success factors. Regarding to both types of long-term assets, organizations can obtain a complete picture for making comparisons and improvements in performance. There is a growing number of studies demonstrating the importance of intellectual property in economy. The report *Intellectual Property and the U.S. Economy: Industries in Focus* (2016) shows that intellectual property-intensive (IP) industries are a major, integral and growing part of the U.S. economy. This study revealed that 81 industries designated as IP-intensive directly accounted for 27.9 million jobs and indirectly supported an additional 17.6 million jobs in 2014. Together, this represented 29.8 % of all jobs in the U.S. There are similar studies carried out by the European Patent Office and the Office for Harmonization in the Internal Market (OHIM) published in 2013 and in 2015 using European Union (EU) data. The first study is concerned with the main IP intensive industries and their contribution to the economic performance and employment within the European Union. Their results indicated that about 35% of jobs in the European Union rely on IP intensive industries, approximately 26% of all jobs in the EU are provided directly by these industries and 9% of all employment in the EU comes directly from them. The study showed that about 39% of total economic activity in the EU is generated by IP intensive industries. The study also concludes that European companies owning IP achieve considerably better economic performance than their competitors not owning IP by using descriptive statistics methods. According to this study especially ownership of patents, trademarks and designs is strongly associated with improved economic performance of individual companies.

As identified in the PricewaterhouseCoopers' publication *Trends In Corporate Reporting 2004 – Towards VALUEReporting*, much of the information that relates to value drivers and key intangible assets, and which is critical to a business's success and sustainability (customers, people, brands and innovation), is not currently being reported in a sufficiently credible and consistent fashion by many companies.

With respect to conclusions of studies carried out on factors of companies' success, they are moving from tangible to intangible factors due to the realization of the high potential of intangible resources (Hand, 2001, Zigan, Zeglat, 2010). The shift towards consideration of power of IAs and their contribution to companies' economic growth is attracting attention of researchers (García-Ayuso, 2003, Vodák, 2011, Volkov, Garanina, 2007, Jerman, Kavčič, Kavčič, 2010, Hussi, Ahonen, 2002, Gerpott, Thomas and Hoffmann, 2008, Boekenstein, 2009, Jaya, 2016, Murray, 2017).

Also Grüber (2014) concluded that major production inputs do no longer comprise of items, such as property, plant and equipment, but rather of brands, knowledge and other technological innovation and intangible values have continuously become significant value drivers of companies in today's economy, despite these facts, financial accounting and reporting still lacks to incorporate and to report such values properly. Academics and practitioners argue that the economic importance of intangible values in industrialized countries has increased significantly during the past decades. This phenomenon is mainly due to the notable growth of the tertiary sector, resulting in fundamental changes of the

economy: the traditional industrial business model has continuously become less important, as economic wealth creation is more and more based on the exchange and manipulation of invisible or intangible values. The significant items that are key to a business and that drive revenues are brands, copyrights, patents, licenses and the like.

There are some studies concerning the significance of IAs within European companies (Nell, Tettenborn, Rogler, 2013, Jerman, Kavčič, Kavčič, 2010). Nell, Tettenborn, Rogler (2013) examine both the materiality of intangibles and the related disclosure quality under IFRS in the notes of firms on the German benchmark stock index DAX during the four-year period 2008-2011. The study of Jerman, Kavčič, Kavčič (2010) aims the significance of IAs in transition economies like Croatia, Slovenia, the Czech Republic, Germany and USA. The study is based on data of the period 2004-2008. The results of the study prove that intangibles constitute an important asset for traditional market economies, while it was not proven for post-transition and transition economies. Despite the fact that many analyses underline their growing significance in today's business environment.

Also the studies of Dunse, Hutchinson and Goodacre (2004), Edvinsson (2000) proved that a creation of the future value is significantly based on IAs such as IP and goodwill. A company's IAs — especially those related to internally generated information technology and other internally generated. IAs are not well reported on corporate balance sheets according to these studies. The vast majority of intangible spending is expensed, due to strict criteria for recognition of IAs in an accord with IFRS or US GAAP (Lev, Daum, 2004). There are some exceptions – goodwill arising in acquisitions, the other exception is a small portion of software or development costs (after fulfillment the criteria for recognition according to IAS 38 or Topic ASC 350-30). The special item of intangibles is goodwill which is recognized and reported only due to business combinations, in individual companies could not be recognized despite the fact that it is clear that there are some factors of success of the firm which could not be described by current accounting treatments.

The importance of this special item of intangibles became apparent in mergers and acquisitions. Acquisitions reveal the hidden value of IAs (Boekenstein, 2009, Sedláček, Valouch, Hýblová, Křížová, 2014), that did not meet the criterion for their recognition previously. The results of Boekenstein's study (carried out for pharmaceutical sector) revealed that in mergers and acquisitions the total value of the acquired company increases approximately six times.

According to Zanoni (2009) six components of goodwill emerging from business combinations are identified. He breaks down the goodwill emerging from a business combination in overpayment, synergies between the target and the acquiring firm, revaluation, newly identified IAs, and internally generated goodwill.

Garcia, Ayuso (2003) concluded in their review that the research efforts conducted over the past three decades have provided compelling evidence that:

- Intangibles are fundamental sources of competitive advantages that must be identified, measured and controlled in order to ensure the efficient management of corporations.

- There is a consistent relationship between most intangible investments and subsequent earnings and value creation in business corporations.
- There is a lack of relevant and reliable information on the intangible determinants of the value of companies that actually results in significant damages for business firms and their stakeholders.
- Intangibles are nowadays the main drivers of growth and competitiveness in our societies and their measurement is essential for the design and implementation of public policies.

2. METHODOLOGY AND DATA

The paper is concerned with the level of IAs in the Czech listed non-financial companies. The main aim is to analyze relations between the development of level of IAs in analyzed companies and level of economic growth measured by changes in the Gross Domestic Product (GDP).

The financial statements of companies listed on primary market of Prague stock exchange covering the period 2005-2015 were analyzed. For comparability of the results, the companies which prepare financial statements according to IFRS were analyzed. The starting year was selected due to the fact that all consolidated financial statements of publicly traded companies are obliged to be prepared in an accord with IFRS (Regulation of European Commission No. 1606/2002 of the European Parliament and of the Council on the application of international accounting standards).

Seven non-financial companies were listed on primary market of PSE as at January 1, 2017. The dataset covers 7 firms in total (ČEZ, Fortuna, Kofola, O2, Pegas Nonwovens, Unipetrol, VGP) one company was excluded due to short time series (Kofola – listed since 2015). Dataset covers 62 firm-years.

The share of IAs in balance-sheet total, share of IAs in Fixed Assets and the structure of IAs were analyzed.

$$IABTi \text{ (IA in Balance – sheet Total)} = \frac{\text{Net amount of IA}}{\text{Balance-sheet Total}} \quad (1)$$

$$IAFAi \text{ (IA in Fixed Assets)} = \frac{\text{Net amount of IA}}{\text{Net amount of Fixed Assets}} \quad (2)$$

The relation between the development of share of IAs in the Fixed Assets and the development of economy measured by GDP changes was analyzed for individual firms due to the fact that each firm in the sample represents a different sector of economy.

3. RESULTS

The average share of IA in research sample was in a range from 8.7% in 2005 to 27.8% in 2015. The results were compared to the results of study of Jerman, Kavčič, Kavčič (2010). According to results of the fore-mentioned study, the average share for the companies was 6,0% for the year 2005, and the share for further three year was

significantly lower in comparison with results of our study. The results of the study are based on the sample of companies listed on the PSE in 2008 – this is 25 companies including financial ones. Our sample does not include financial companies. These subjects were excluded from our analysis due to quite different character of their activities which is not based on exploitation of IAs significantly.

Table 1: Comparison of studies Bohušová, Svoboda and Jerman, Kavčič, Kavčič (2010)

Study / Year	2005	2006	2007	2008
Bohušová, Svoboda	8.67%	28.45%	23.52%	19.81%
Jerman, Kavčič, Kavčič	6.01%	5.96%	6.19%	6.40%

Source: annual reports data and study Jerman, Kavčič, Kavčič (2010)

Due to the fact that each company is operating in a quite different sector, not any uniform tendency in development of the share of IA in researched items was expected. The individual sectors of the economy could reflect the changes in the economy growth in a different way and with different delays. The results of the analysis are in an accord with this assumption.

The IAs are getting more significant in a span of time. Closer analysis of the structure of IAs carried out revealed quite a different structure in each company. The structure is significantly influenced by the sector in which companies operate. ČEZ is operating in power and utilities sector. The prevailing item in IA is goodwill (from 38% to 67.6%) followed by licenses and other intellectual assets. Software is less significant item in the intangibles assets in ČEZ, excluding the extreme value of the year 2005, the share in IA are in the range from 8.8% to 18.8%.

Fortuna entered the Prague Stock Exchange in 2006. This company engaged in the operation of lotteries and other similar games is reporting the highest share of IAs of analyzed sample proportion of IAs. The most significant item is goodwill recognized as a result of realized business combinations. The share is decreasing during the time from 89.2 in 2006 to 78.4% in 2015. The items of other IAs (including patents, licences, industrial property rights, trademarks etc.) are in the range from 11% in the initial years to 18% in 2015. The insignificant items of IA are software with share of 0.3% to 4.2%. The company O2 is engaged in telecommunications. The prevailing item in the structure of IA is goodwill as a result of business combinations (share in the range from 51.2% to 67.5%). This item decrease significantly due to division of company in 2015. The share of patents licenses and other similar items decreased in the span of time (from 26.9% to 15%) due to their amortization. This item especially includes the right to operate mobile networks in the Czech Republic, Slovakia. The share of software is approximately 18%.

Pegas Nowovens operates primarily in the production of nonwoven textiles. The share of software and valuable rights is insignificant in this company. The IA is represented by goodwill recognized as a result of business combinations (97.3% to 99.9%).

Unipetrol is mainly engaged in refining and petrochemical production activities. Based on sales, the company is one of the ten largest Czech companies. The value of IAs has continuously increased in the researched time series. Within IAs, goodwill was recognized only between the years 2007 - 2011, this item was not important category (only 2-3% of the total fixed assets). In 2007, the Group acquired insignificant share (0.225% of the share capital) of the company CZECH RAFINÉRSKÁ, Inc. Software covers only from 4.5% to 7.0% of the total IAs in this company. In 2012 due to testing for impairment the goodwill was decreased to zero. The most significant category (87.2% to 93.5%) are assets as patents, licenses and other measurable rights.

The Belgian developer company VGP joined the Prague stock exchange in 2007. Nine-year time series of data was available. Software was the only item in IAs in the period from 2007 to 2012. Due to business combination in 2013 the dominant item became goodwill with the share between 91.8% and 98.3% in 2013-2015. It has arisen from the acquisition and it is attributable to acquired workforce, scale and customer spread of the operations, resulting from acquiring the operations of the group.

According to the conclusions of the study of Jerman, Kavčič, Kavčič (2010), goodwill is the most important item of IAs intangible asset. Goodwill gathers the not recognized intangible capital in business companies which arise due to business combinations. In companies without business combinations in analyzed period the intangible capital such as knowledge, human capital, education and training, R&D are not recognized despite their possible existence. Similar to results of this study an increasing share of goodwill is evident. It is due to business combination undertaken in the analyzed period. The conclusions concerning the structure of IAs in our research are almost identical with this study.

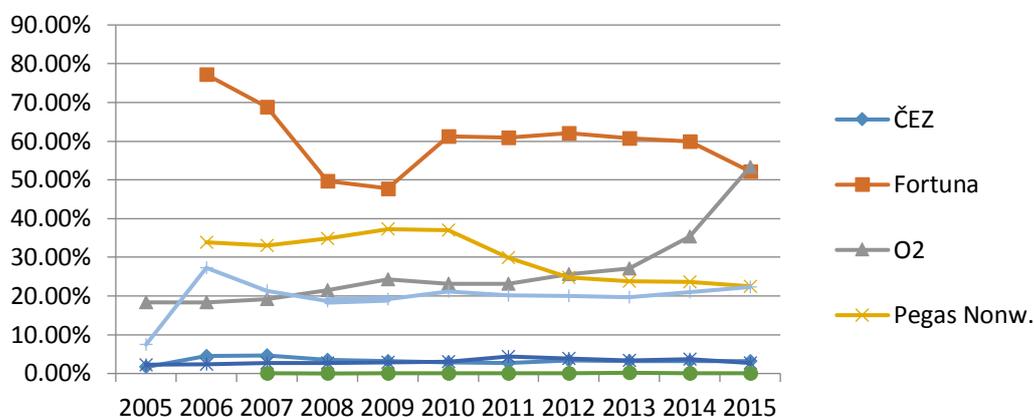
The analysis made by Jerman, Kavčič, Kavčič (2010) proves that IAs are becoming more and more important for today's business environment, but there is still a significant difference between different types of economies. Our research concerns the companies operating in the Czech Republic and the importance of intangible assets in these companies. It is clear that from the Figures 1, 2 that the overall trend in the share of IAs in total assets is rather growing, however, for all companies the development differs significantly in the analyzed period. The analyzed period was affected by global economic crisis, with its first symptoms in 2007 and continuing in 2008 and 2009. For this reason, it was deduced that the volatility could be influenced by this situation.

Therefore, a measurement of correlation between the share of IA in Fixed Assets and the development of the economy measured by changes in GDP was evaluated.

The results of correlation analysis did not approve any unified relationship between the value of intangible assets and the growth of economy measured by the annual change in GDP. Due to the fact that researched companies are representatives of quite different industries (chemical industry, telecommunications, energy, development activity, the entertainment industry), the analysis was carried out for particular representatives individually. The researched period covers the period of the global economic crisis, it could be considered as a further reason for ambiguous results. A more detailed analysis can identify a positive correlation in the case of ČEZ and Fortuna. The relationship

between the value of intangible assets and economic growth was not considered as significant for the other companies.

Figure 1: The share of IAs in Balance-sheet Total Development



Source: Based on annual reports data

Table 2: Correlation between economic growth and level of IAs

Company	without delay	delay 1 year	delay 2 years
ČEZ	0.0368	0.8068 ^(***)	0.7408 ^(***)
Fortuna	0.6359 ^(**)	0.0112	-0.1999
O2	-0.0322	-0.2371	-0.4565
Pegas Nonwovens	0.0368	0.1708	0.5240 ^(*)
Unipetrol	-0.3623	-0.4985	-0.8744 ^(***)
VPG	0.1380	-0.3112	-0.4800

Source: Own calculation based on annual reports data

4. CONCLUSIONS

The paper is the initial part of research concerning the role of intangible assets in economics of business companies and possible ways of measurement of their efficiency. In recent days, the accounting treatment of intangibles in IFRS has begun to change, with the decision to capitalize expenditures connected to intangibles. Recently, it has been proposed to extend the capitalization of intangibles to expenditure on research and development (R&D). There are not any treatments for reporting the majority of intangible capital (knowledge, human capital, education, training, market position, etc.) in financial statements of companies according to current financial reporting treatments. Only due to business combination these items are released as an item of goodwill.

The research carried out was concentrated on the structure of IAs of publicly traded companies reporting in an accord with IFRS.

The IAs category is getting more significant in a span of time. Based on results of analysis, the role and the structure of IAs in a company are influenced by the sector which is involved in. The prevailing item in IA is goodwill which represents intangible capital which is not recognized by standard methods of financial reporting. Only business combinations undertaken reveal these factors. There is an increasing tendency in volume of IAs in companies listed in Prague Stock Exchange. Any common relation between a volume of IAs and the economic growth was not confirmed. Comparing the results of our analysis to the similar analysis carried out on highly developed market economies Jerman, Kavčič, Kavčič (2010), Niebel, O'Mahony, Saam (2016), Su, Wells (2015) there is a significant difference in the share of intangibles between market economies and the Czech Republic.

The conclusions of this study are influenced by the limited number of selected companies that are listed on the Prague Stock Exchange reporting according to the IFRS. The small and medium companies in the Czech Republic preparing their financial statements in an accord with the Czech Accounting Legislation and comparison to companies reporting according to IFRS are the subject of the further research.

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