# Companies´ value in the context of economic crisis

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## Key Words
Cash-flows, income-based value, insolvency, payment risk, receivables, value drivers

## Abstract
*Until a mid of 2007, European economy was highly growing. In spring of the year 2007, it was announced that payment risk decreased as a consequence of economic growth. Nevertheless, in 2008, the economic uncertainty caused by the credit crunch has projected to all aspects of general environment of business entities, payment risk included. During the period of economic crisis, a number of business entities have fallen into bankruptcy because of insolvency that was mainly secondary insolvency which is cyclical problem. Objective of this paper is to determine the impact of bad receivables on solvency of European enterprises and consequently on their income-based value within the period of 2008 – 2013. This paper builds mainly on secondary data about payment risk and income-based value of European enterprises. The results are consequently discussed also with regard to the fact that currently the largest debtors are the states.*

## Introduction
In 2010, enterprises in the European Union (EU) have written off receivables in total amount higher than 312 billion euro. This amount exceeds the one that the EU pledged to provide to Greece, Ireland and Portugal together. Nevertheless, a great part of receivables of private enterprises are just receivables from state administration.

Amounts of uncollectible and written-off receivables started to be liquidating for substantial part of private enterprises. At least, such receivables present a threat for enterprises while they are of course a barrier to enterprises´ development. In connection to amounts of receivables, it is spoken about payment behaviour of companies, but it is more about secondary insolvency than about payment discipline, especially when substantial part of these receivables are from the side of state administration (IntrumJustitia, 2011).

In the context of business valuation overdue receivables and uncollectible receivables decrease an enterprise value in both, property valuation approach and income-based valuation approach as well. From accounting point of view, receivables are a part of assets. In Conceptual Framework of IFRS, an asset is defined as "a resource controlled by the enterprise as a result of past events and from which future economic benefits are expected to flow to the enterprise" (IASB, 2014). In case of receivables, the future economic benefit is a positive cash-flow in the moment of receivable payment. When a payment is delayed, expectation of such a benefit is reduced. At that moment, discussion about asset existence could be started as probability of economic benefit is lowering (Beranova&Cudel, 2007).

Mostly, the term "assets" is identified as property. Nevertheless, the question is, if a receivable is really a property. Receivable is a right; it is a right to receive an economic benefit which is mainly presented by positive cash-flow. It represents a right event if the payment is delayed; a creditor has still a right but value of this right is approaching to zero as an overdue

receivable becomes an uncollectible receivable. In accounting, the tools for recognition of such cases exist, and impairment losses are presented in financial statements (Marek, 2009).

At enterprise valuation, these bad receivables require a special approach as well. Income-based valuation approaches take only operating assets into account. These operating assets are also receivables (Marik*et al.*, 2007). Nevertheless, if a receivable is overdue, it is not operational asset any more especially for two main reasons. The first reason corresponds with accounting point of view and comes from the lowering probability of positive cash-flow. Unlike the accounting approach, at business valuation both, overdue and uncollectible receivables are not reduced for a part of their value, but these receivables are fully eliminated. On the other side, unrealized income coming from these receivables is eliminated from operating profit. The second reason is different risk connected with bad receivables which is much higher than a risk of other enterprise operating activities.Elimination of bad receivables within enterprise valuation reduces company´s assets and its property base.

Procedures of property-based business valuation in the view point of bad receivables are influenced by legal specifics of each country. Nevertheless, also in this case the enterprise value decreases substantially as the risk of these receivables is very high and legal actions to recover the debts are usually necessary. Within the bankruptcy, trade receivables are in most cases part of the last group of debts. Depending on the law and legal base of a receivable, 0 – 70 per cent of receivable could be cashed. However, this is within a bankruptcy process where recommended period for discounting is at least 24 month when discount rate of course reflects the risk of such a receivable (Marik*et al.*,2011).

It is obvious that receivables represent high risk assets. But on the other hand, from the view point of company´s competitiveness, providing the customers with trade credit is a necessity (Neumaierova&Neumaier, 2002).

## Objective of the Paper

This paper presents the results of research on company value in the context of economic crisis and subsequent solvency problems of enterprises in the EU. Objective of this paper is to determine the influence of economic crisis on enterprise value. The economic crisis has its consequences not only in production and profits of business entities, but mainly in cash-flows because substantial part of profits lead to negative cash-flow which means that expenses had to be paid but on the other hand, incomes have not been cashed. The paper investigates relation between enterprise value and payment risk represented by delayed payments, uncollectible receivables and written-off receivables.

The research has been realized on the statistical sample of 2,121 companies from 23 EU member countries where the financial data were observed in the six-year period of 2007 – 2012. Observations were focused mainly on development of two variables, the enterprise value and earnings before interest, taxation, depreciation and amortization (EBITDA) which is a key variable in enterprise value calculation. As both variables enterprise value and EBITDA are absolute values which are not comparable among different business entities, the ratio of enterprise value to EBITDA has been observed as well and mainly annual percentage changes of variables have also been investigated in connection with changes in payment risk.For purposes of this work, value of company is calculated as the perpetuity of cash-flow. This is the method of company value calculation when zero rate of company´s growth is supposed.

Due to the fact that situation differs substantially across the EU, the effect of economic crisis on enterprise value has been investigated not only in the EU´s total but in each EU member country as well while differences are obvious also among different business activities.

Consequently, the effect has been observed in the frames of business activities classification (NACE).

The research is based mainly on secondary data. Enterprises´ financial data are taken from Bureau van Dijk Amadeus database, and these data are combined with European Payment Index which is annually published as report based on survey of IntrumJustitia. The payment risk (Payment Index) here is based on individual risk profile of each country while the profile shows criteria of overall assessment. These criteria are as follows:

- Effective payment duration in days;
- Absolute duration of delay in days;
- Individual age groups of receivables in relation to the total value of outstanding receivables;
- Declared payment losses;
- Companies´ forecasts about development of payment risk;
- Consequences of payment risk for companies (IntrumJustitia, 2007).

As of the data availability, there are no financial data of enterprises from Cyprus, Denmark, Iceland, Malta,Lithuania and Luxembourg. For this reason, the country figures were not included in overall analyses. Because of number of enterprise with available data, enterprises of Latvia and Estonia are joined in one statistical sample because of regional similarity, as well as enterprises from Belgium and Netherlands. Because the data availability, newly entering countries have been included in the research neither. At research data elaboration, mainly statistic methods of correlation analysis and analysis of variance have been applied as well as descriptive statistic methods.

## Effect of Payment Risk in Enterprise Value

The economic crisis has clearly shown that receivables are the assets bearing a risk which is much higher than it was supposed before. The theory of credit management speaks, among others, about verification of customers´ payment discipline. But reality shows that it is not enough because the problem of secondary solvency exist. Economic crisis and subsequent economic uncertainty caused by the credit crunch has projected to all aspects of general environment of business entities, payment risk included. During the period of economic crisis, a number of business entities have fallen into bankruptcy because of insolvency that was mainly secondary insolvency which is cyclical problem.

Until a mid of 2007, European economy was highly growing. In spring of the year 2007, it was announced that payment risk decreased as a consequence of economic growth. Payment duration and payment delay decreased as well (IntrumJustitia, 2007). Even if each European country is characteristic with different features the economic growth is clearly visible in the growth of enterprise value between 2006 and 2007 with the average growth of 14.32 per cent while the highest growth of enterprises value has been observed in the Czech Republic, 36.53 per cent. On the other side of range there was Poland with average decrease of 0.68 per cent; Poland is also the only country where the decrease of enterprise value was observed in 2007.

As of the payment index, European average in 2007 has the value of 150.92 points.The overall average values are presented in the Tab. 1. The results presented there are completed with the basic index comparing the enterprise value to the basic year of 2007. In these overall average results, a recovery is visible in 2012 however the payment index is continually growing which means increasing payment risk.

| Year | Annual Change in EV[1] (*per cent*) | Change in EV Comparing to 2007 Basic Index (*per cent*) | Payment Index (*points*) | Annual Change in Payment Index (*per cent*) |
|------|------|------|------|------|
| 2007 | 14.32 | | 150.92 | -0.66 |
| 2008 | -33.21 | -33.21 | 151.28 | 0.24 |
| 2009 | 13.17 | -19.67 | 154.68 | 0.22 |
| 2010 | 12.07 | -2.30 | 155.28 | 0.38 |
| 2011 | -1.93 | -4.85 | 156.00 | 0.46 |
| 2012 | 16.89 | 11.31 | 156.24 | 0.15 |

**Tab. 1 Average Changes in Enterprise Value and Payment Index**

When the correlation analysis is applied on the two variables, annual change in enterprise value and annual change in payment index, the correlation coefficient has the value of 0.0936 which represents almost the statistical independence of the analysed values on the average European level.It could be supposed that if payment risk has an impact to enterprise value, a negative correlation would exist here. Nevertheless, the evidence from single counties differs. Subsequently, results of each country analysis are presented in alphabetical order.

*Austria* as a country in heart of Europe is closely connected to other European economies, especially German´s. It is an economy with large service industry and strong industrial sector. The Austrian economy also benefits from strong commercial relations, mainly in banking and insurance sector (IntrumJustitia, 2008).

| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|---|------|------|------|------|------|------|
| Payment Index | 151 | 152 | 153 | 153 | 155 | 153 |
| Annual Change in Payment Index (%) | -1.31 | 0.66 | 0.66 | 0.00 | 1.31 | -1.29 |
| Annual Change in EV (%) | 9.18 | -35.79 | 17.84 | 19.48 | -0.64 | n.a. |
| Payment Loss (% of total turnover) | n.a. | 2.1 | 2.0 | 2.0 | 2.3 | 2.1 |

**Tab. 2 Average Changes in Enterprise Value and Payment Index in Austria**

Development of enterprise value in Austria follows the average development in Europe. There is an increase in 2007, then decrease in 2008, increases in next two year and decrease in 2011. For 2012 there are no data available for Austrian companies yet. Hypothesis about negative correlation between the payment risk and enterprise value is accepted in first two year of observed period and also in the year 2011 where increase in payment risk leads to decrease in enterprise value and vice versa. The payment risk here is quite closed to European Average. Nevertheless, when observing the interconnection between the enterprise value and payment risk, it is clearly visible here that the most part of the influence is on the side of written-of receivables. Correlation analysis of changes in enterprise value and payment loss results in the correlation coefficient value of -0.3542, and proves the hypothesis about negative effect of bad receivables in enterprise value.

*Belgium* and the *Netherlands* are tight together not only geographically. Both benefit from developed transportation infrastructure as they are small countries with few natural resources. These countries are depending on the state of wold markets (IntrumJustitia, 2012).

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[1] EV – EnterpriseValue

| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|---|---|---|---|---|---|---|
| Payment Index | 152 | 152 | 155 | 155 | 155 | 155 |
| Annual Change in Payment Index (%) | -3.81 | 0.00 | 1.98 | 0.00 | 0.00 | 0.00 |
| Annual Change in EV (%) | 14.48 | -21.60 | 10.74 | 11.92 | -0.52 | 7.91 |
| Payment Loss (% of total turnover) | 2.4 | 2.4 | 2.5 | 2.5 | 2.6 | 2.6 |

**Tab. 3 Average Changes in Enterprise Value and Payment Index in Belgium and the Netherlands**

As there are combined enterprises from two countries, it is necessary to state, that the percentage of payment loss in both is the same in the whole observed period; values are presented in the Tab. 3. When observing the development of enterprise value, European average trend is followed here again. Nevertheless, the payment index is stable in last four years as well as there are only minor changes in percentage of payment losses. As resulted from the correlation analyses, the hypothesis about negative effect of bad receivables in enterprise value is rejected here.

The *Czech Republic* is the EU member state since 2004. Its economy was strongly growing until 2007, and in 2008 a slowdown was witnessed. Czech economy is closely linked to German economy. The latest survey of OECD shows that economic recovery of the Czech Republic is much less dynamic that in other economies in the region (IntrumJustitia, 2013).

| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|---|---|---|---|---|---|---|
| Payment Index | 173 | 171 | 172 | 173 | 174 | 174 |
| Annual Change in Payment Index (%) | -0.57 | -1.16 | 0.58 | 0.58 | 0.58 | 0.00 |
| Annual Change in EV (%) | 36.53 | 19.73 | 6.93 | -0.17 | -12.93 | -7.87 |
| Payment Loss (% of total turnover) | 3.5 | 3.0 | 3.0 | 3.1 | 3.1 | 3.0 |

**Tab. 4 Average Changes in Enterprise Value and Payment Index in the Czech Republic**

When observing development of enterprise value, specific features are characteristic for the Czech Republic. Enterprise value is growing until the 2009, and is decreasing after. The research hypothesis is rejected here from the view point of correlation between enterprise value and payment losses, but is fully accepted from the viewpoint of correlation between enterprise value and payment index where the correlation coefficient has the value of -0.7016. As it is described in the methodological background, the payment index is based on complex set risks where the Czech Republic is quite specific due to the political situation and consequent attempts of reforms which negatively impact the business environment.

*Estonia* and *Latvia* are the Baltic states; former parts of the Soviet Union. Even if these two countries are closed geographically, Estonian economy is visibly more successful. Nevertheless, both countries have strong trade tights (IntrumJustitia, 2008).

| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|---|---|---|---|---|---|---|
| Payment Index | 150 | 150 | 154 | 155 | 156 | 157 |
| Annual Change in Payment Index (%) | -2.92 | 0.00 | 3.01 | 0.65 | 0.65 | 0.64 |
| Annual Change in EV (%) | 32.69 | -61.17 | 30.43 | 44.12 | -4.33 | 15.88 |
| Payment Loss (% of total turnover) | 3.0 | 2.9 | 3.1 | 3.4 | 3.6 | 3.5 |

**Tab. 5 Average Changes in Enterprise Value and Payment Index in Estonia and Latvia**

Estonia and Latvia are other countries where the average European trend in enterprise value is followed but the payment index is continually increasing which means increasing payment risk. From this data set it is visible that enterprise value and bad debts are not correlated. Moreover, when data of 2013 are regarded, the payment risk in these two countries goes the opposite direction; decreases in Estonia, increases in Latvia. When the third Baltic state

is taken into account, in Lithuania, the payment index raised from 159 point to 163 points in 2013.

*Finland* is one of the most stable European countries. Finish economy is highly industrialized; the key industries are the wood, metals, engineering, telecommunications and electronic industries for which the export is vital (IntrumJustitia, 2008). This way, Finish economic growth depends on other European economics.

|  | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|---|---|---|---|---|---|---|
| Payment Index | 124 | 123 | 125 | 126 | 126 | 126 |
| Annual Change in Payment Index (%) | -0.80 | -0.81 | 1.63 | 0.80 | 0.00 | 0.00 |
| Annual Change in EV (%) | 5.89 | -35.64 | 25.62 | 18.37 | -18.75 | 2.88 |
| Payment Loss (% of total turnover) | 0.7 | 0.6 | 1.0 | 2.0 | 1.9 | 1.6 |

**Tab. 6 Average Changes in Enterprise Value and Payment Index in Finland**

It comes out from the analyses´ results that value of Finish enterprises depends much more on other factors then on the bad debts. Even if the Finish economic is quite stable, the analysis of enterprise value also shows that value of enterprises in Finland is still lower than it was in 2007, the difference here is -19.69 per cent.

*France* is one of the biggest European economies but already in 2007, French economic growth was below the European average. A great part of large French companies was under government ownership until 2008 (IntrumJustitia, 2008).

In 2011, France lost the AAA credit rating and its trade deficit is still highly increasing. Development of French enterprises value follows again the average European trend, but the payment index is not decreasing. Increase between 2011 and 2012 is visible and another increase is witnessed in 2013 when the payment index has the value of 152 point even if the payment loss is stable from 2011 on the level of 2 per cent. Nevertheless, hypothesis about interconnection of bad debts and enterprise value is rejected here. But on the other side, the enterprises value is again below the value of 2007 while the difference is -9.04 per cent.

|  | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|---|---|---|---|---|---|---|
| Payment Index | 145 | 146 | 150 | 150 | 148 | 149 |
| Annual Change in Payment Index (%) | -0.01 | 0.69 | 2.74 | 0.00 | -1.33 | 0.68 |
| Annual Change in EV (%) | 15.77 | -32.21 | 24.27 | 14.85 | -4.32 | 14.36 |
| Payment Loss (% of total turnover) | 1.6 | 1.9 | 2.1 | 2.2 | 2.0 | 2.0 |

**Tab. 7 Average Changes in Enterprise Value and Payment Index in France**

*Germany* is the Europe´s biggest economy. German economy has been heavily impacted by the modernization and integration of the eastern region (IntrumJustitia, 2009). Currently, the highest impact on German economy has the Euro-zone debt crisisand the situation in Greece, Portugal and the other countries of south Europe (IntrumJustitia, 2013).

|  | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|---|---|---|---|---|---|---|
| Payment Index | 155 | 150 | 153 | 153 | 149 | 147 |
| Annual Change in Payment Index (%) | 2.65 | -3.23 | 2.00 | 0.00 | -2.61 | -1.34 |
| Annual Change in EV (%) | 11.24 | -27.30 | 14.20 | 23.18 | -4.65 | 17.53 |
| Payment Loss (% of total turnover) | 2.0 | 2.0 | 2.1 | 2.6 | 2.4 | 2.0 |

**Tab. 8 Average Changes in Enterprise Value and Payment Index in Germany**

From the view point of enterprise value, the clear European average trend is observed again. But in 2012 the value of German enterprises is already higher than in 2007 while the difference is 14.97 per cent. The research hypothesis is again rejected here.

*Greece* is probably the most disputable European economy. Between 2003 and 2007, the Greek economy was strongly growing mainly due to great infrastructure projects. Until the 2012 the Greek country´s debt has risen up to 159.1 per cent of GDP (IntrumJustitia, 2008; 2009; 2012)

|  | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|---|---|---|---|---|---|---|
| Payment Index | 174 | 174 | 180 | 180 | 188 | 190 |
| Annual Change in Payment Index (%) | 0.58 | 0.00 | 3.45 | 0.00 | 4.44 | 1.06 |
| Annual Change in EV (%) | 21.19 | -31.64 | 2.96 | -13.56 | -10.53 | 5.41 |
| Payment Loss (% of total turnover) | 2.1 | 2.2 | 3.0 | 3.0 | 4.9 | 5.9 |

**Tab. 9 Average Changes in Enterprise Value and Payment Index in Greece**

The Tab. 9 shows the difference from European average in development of enterprise value. Very small growth of 2.96 per cent is visible in 2009 while in 2010 when the enterprise value in most European countries was growing, is decreasing again. When enterprise value is compared between 2007 and 2012, the difference is -38.88 per cent which is one of the highest negative differences in the statistical sample. The highest growth of payment index and payment loss also goes for the account of Greece.

*Hungary* is another country entering the EU later. Currently, the Hungarian economy is evaluated as unhealthy and government´s fiscal policies are described as unsustainable (IntrumJustitia, 2012).

|  | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|---|---|---|---|---|---|---|
| Payment Index | 160 | 161 | 165 | 165 | 168 | 170 |
| Annual Change in Payment Index (%) | 1.27 | 0.63 | 2.48 | 0.00 | 1.82 | 1.19 |
| Annual Change in EV (%) | 13.70 | -42.87 | 34.16 | -3.29 | -26.56 | -18.67 |
| Payment Loss (% of total turnover) | 2.3 | 2.5 | 2.7 | 2.7 | 3.0 | 3.5 |

**Tab. 10 Average Changes in Enterprise Value and Payment Index in Hungary**

Enterprise valued in Hungary shows the great difference from the most of European countries as it is still decreasing. In comparison to 2007, in 2012 value of Hungarian enterprises is lower for 64.48 per cent while payment index as well as the payment loss is still growing. The research hypothesis is accepted here even if the value of correlation coefficient is -0.2734 which is not a significant dependence.

*Ireland* is pointed in economic lessons for its economic growth higher than the growth of four biggest European economies which has been sustained for more than 12 years and the country was called as Celtic Tiger. However, the Irish economy is trade-dependent and economic crisis started the exports decline leading to high unemployment rate and negative economic growth (IntrumJustitia, 2010).

|  | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|---|---|---|---|---|---|---|
| Payment Index | 141 | 142 | 146 | 147 | 153 | 154 |
| Annual Change in Payment Index (%) | 0.71 | 0.71 | 2.82 | 0.68 | 4.08 | 0.65 |
| Annual Change in EV (%) | 1.68 | -35.59 | 12.15 | 6.69 | 2.80 | 21.45 |
| Payment Loss (% of total turnover) | 1.2 | 1.4 | 2.0 | 2.3 | 2.8 | 2.8 |

**Tab. 11 Average Changes in Enterprise Value and Payment Index in Ireland**

Even if the economic recession is still expected by the Irish Central Bank (IntrumJustitia, 2012), the results of enterprise value development show increases. The only decline is observed in 2008 when the economic crisis started. Comparing the enterprise value between 2007 and 2012, in 2012 is the value of Irish enterprises higher for 4.85 per cent. In connection to the payment risks, it is visible that the substantial increase of payment index for 6 point between 2010 and 2011 is followed by only slowed increase in enterprise value. Results of the analyses clearly lead to rejection of the research hypothesis.

*Italy* is currently one of the south European countries which are bearing the problem of deep indebtedness; it is the Euro-zone´s second most indebted country. Italian economy has been heavily impacted with the economic crisis as the country is highly dependent on export, mainly to Germany (IntrumJustitia, 2010; 2012). Observing the development of Italian enterprises´ value, the trend follows the European average nevertheless, if the values are compared between 2007 and 2012, there is the difference of -21.03 per cent. But statistical dependence of payment risk and enterprise value does not exist here, and research hypothesis if rejected.

|  | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|---|---|---|---|---|---|---|
| Payment Index | 157 | 158 | 162 | 163 | 164 | 164 |
| Annual Change in Payment Index (%) | 2.61 | 0.64 | 2.53 | 0.62 | 0.62 | 0.00 |
| Annual Change in EV (%) | 0.81 | -32.16 | 21.77 | 2.68 | -13.61 | 10.66 |
| Payment Loss (% of total turnover) | 1.3 | 1.6 | 2.5 | 2.6 | 2.6 | 2.5 |

**Tab. 12 Average Changes in Enterprise Value and Payment Index in Italy**

**Norway belongs to the group on north European countries which are characterized with the lowest levels of payment risk. The Norwegian economy is currently characteristic with upward trend, but Norway is an exception within the European countries as it exports oil and gas.**

|  | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|---|---|---|---|---|---|---|
| Payment Index | 130 | 130 | 134 | 134 | 133 | 130 |
| Annual Change in Payment Index (%) | -0.76 | 0.00 | 3.08 | 0.00 | -0.75 | -2.26 |
| Annual Change in EV (%) | 23.57 | -46.35 | 56.04 | 24.80 | -14.63 | 13.90 |
| Payment Loss (% of total turnover) | 1.2 | 1.3 | 2.0 | 2.5 | 2.3 | 2.0 |

**Tab. 13 Average Changes in Enterprise Value and Payment Index in Norway**

Enterprise value of Norwegian companies repeats the average European trend again as well as the development of the payment risk which is on the same level as it was in 2007 even if the payment loses are for the 0.8 percent points higher but the enterprise value in 2012 is higher for 18.44 per cent comparing to 2007. The research hypothesis is rejected again.

*Poland*is one of the countries which has pass through successful transition. Even though, Polish market is characteristic with one of the highest unemployment rate and high inflation (IntrumJustitia, 2007).

|  | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|---|---|---|---|---|---|---|
| Payment Index | 159 | 159 | 163 | 163 | 161 | 164 |
| Annual Change in Payment Index (%) | -1.85 | 0.00 | 2.52 | 0.00 | -1.23 | 1.86 |
| Annual Change in EV (%) | -0.68 | -43.58 | 71.44 | 27.94 | -8.33 | 35.26 |
| Payment Loss (% of total turnover) | 3.0 | 2.9 | 3.0 | 3.0 | 2.9 | 3.2 |

**Tab. 14 Average Changes in Enterprise Value and Payment Index in Poland**

Observing the figures, payment risk decreased in 2011 but increased again in 2012 while it is increasing also in 2013 when the payment losses went up to 4 per cent. Nevertheless, enterprise value follows the average European trend but with the changes much higher than in other European countries. As already mentioned at the beginning, Poland is also the country where decrease of enterprise value was observed already in 2007. Results of analyses again lead to rejection of the research hypothesis.

*Portugal* is a country which needs the EU financial support as well as Greece, and the country is in deep recession. Also before 2008, the Portuguese economic growth has been the

slowest in the whole Europe. Currently the country risk is still increasing and the government tents to money-saving reforms (IntrumJustitia, 2012).

| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|---|---|---|---|---|---|---|
| Payment Index | 182 | 183 | 184 | 185 | 186 | 190 |
| Annual Change in Payment Index (%) | -0.55 | 0.55 | 0.55 | 0.54 | 0.54 | 2.15 |
| Annual Change in EV (%) | 18.91 | -13.55 | 8.49 | -19.49 | -12.35 | -0.16 |
| Payment Loss (% of total turnover) | 2.5 | 2.7 | 2.7 | 2.8 | 3.2 | 3.6 |

**Tab. 15 Average Changes in Enterprise Value and Payment Index in Portugal**

In the enterprise value, continual decrease is observed at continually growing payment risk. Such a development is not typical in European average. Moreover, the enterprise value in 2012 is for 19.51 per cent lower than in 2007. Even if the research hypothesis is accepted here, it is obvious that value of Portuguese companies is negatively affected by a range of other factors as well.

**Slovakia**, the part of former Czechoslovakia, unlike the Czech Republic is Euro-zone country since 2009. Slovak economy is depending on car industry and this way it was affected by economic crisis heavily (IntrumJustitia, 2010). But when regarding the results of enterprise value development, great effects of subsidies are influencing the outcomes of analyses.

| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|---|---|---|---|---|---|---|
| Payment Index | 160 | 157 | 160 | 162 | 161 | 162 |
| Annual Change in Payment Index (%) | n.a. | -1.87 | 1.91 | 1.25 | -0.62 | 0.62 |
| Annual Change in EV (%) | n.a. | n.a. | 7.67 | 34.83 | -20.75 | 20.74 |
| Payment Loss (% of total turnover) | 2.8 | 2.8 | 3.0 | 3.5 | 3.3 | 3.6 |

**Tab. 16 Average Changes in Enterprise Value and Payment Index in Slovakia**

**Spain** represents another south European country remaining in the recession still. It is the country with the highest rate of jobless in the Euro-zone (IntrumJustitia, 2012). As of the development of enterprise value, untypical negative change is clearly visible in 2010. Payment risk measured with both, complex payment index and payment loss as one of variables entering the payment index, is continually increasing. When observing the enterprise value in Spain in 2012 it is still below the level of 2007 while the difference is -3.94 per cent.

| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|---|---|---|---|---|---|---|
| Payment Index | 158 | 159 | 166 | 167 | 168 | 170 |
| Annual Change in Payment Index (%) | -1.86 | 0.63 | 4.40 | 0.60 | 0.60 | 1.19 |
| Annual Change in EV (%) | 3.52 | -24.57 | 20.43 | -1.88 | -7.95 | 3.46 |
| Payment Loss (% of total turnover) | 2.3 | 2.2 | 2.4 | 2.5 | 2.7 | 2.7 |

**Tab. 17 Average Changes in Enterprise Value and Payment Index in Spain**

**Sweden** as the third north European country is again characterized by its low payment risk. Economic crisis has slowed the Swedish economy down. Nevertheless, this is not visible in the development of enterprise value here which is continually growing since 2009. The only decrease is observed in 2008 which is characteristic for all the European countries. It comes from the observations that the research hypothesis is rejected here; negative correlation between enterprise value and payment risks does not exist.

| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|---|---|---|---|---|---|---|
| Payment Index | 126 | 126 | 129 | 130 | 130 | 129 |
| Annual Change in Payment Index (%) | -2.33 | 0.00 | 2.38 | 0.78 | 0.00 | -0.77 |
| Annual Change in EV (%) | 5.07 | -43.47 | 64.54 | 45.81 | 8.83 | 14.27 |
| Payment Loss (% of total turnover) | 1.0 | 1.1 | 1.6 | 2.1 | 2.3 | 2.1 |

**Tab. 18 Average Changes in Enterprise Value and Payment Index in Sweden**

*United Kingdom*is a leading trading power and financial centre in Europe. That is also the reason why the credit crunch was felt here already at the end of 2007. It is also visible from the change in enterprise value where the decrease is observed already in 2007. In United Kingdom, there is also observed high growth of the payment index; difference between 2007 and 2012 is 9 point. Higher growth is observed only in the south European countries like Greece, Portugal or Spain. However, similar jump in payment risk is visible also in Ireland. But the enterprise value is constantly growing, even in 2011 when the decrease is observed in the most of Europe. This again leads to rejection of the research hypothesis.

|  | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|---|---|---|---|---|---|---|
| Payment Index | 151 | 151 | 155 | 155 | 160 | 160 |
| Annual Change in Payment Index (%) | -0.66 | 0.00 | 2.65 | 0.00 | 3.23 | 0.63 |
| Annual Change in EV (%) | -2.25 | -41.13 | 23.93 | 28.47 | 3.93 | 17.99 |
| Payment Loss (% of total turnover) | 1.9 | 1.9 | 2.4 | 2.4 | 3.2 | 3.5 |

**Tab. 19 Average Changes in Enterprise Value and Payment Index in UK**

Results of the analysis lead to the conclusion that there is not a connection between payment risks and enterprise value. Nevertheless, economic crisis has impacted each business entity, not only in Europe. Subsequent analysis of variance has been applied in order to discover whether the economic crisis has impacted different industries with different effects in the enterprise value. Application of ANOVA on the significance level 0.05 has shown uniform results; no statistically significant difference in development of enterprise value exists here.

These presented results are coming from the pilot study. First results are also pointing out that it depends more on in which country the company is doing its business then in which industry. But these pilot results also show the facts which the theory of business valuation does not count with.

## Conclusion and Discussion

Based on the results of research and subsequent analyses, it is not possible to accept the hypothesis about negative correlation between enterprise value and bad receivables cannot be accepted. But the hypothesis can be neither unambiguously rejected because bad receivables play undoubtedly negative role in enterprise value.

Even if the business valuation theory speaks about the operating assets, from which overdue receivables and uncollectible receivables are excluded, the practice does not meet this principle at all. Enterprise value is a complex problem and the theory works with a range of factors at calculations of business entity´s value. Results of the research show that there must be, and there really are other factors. In practice, the enterprise value, especially the income-based valued is often an object of discussions just due to the range of various factors entering into the calculations as the income-based enterprise value is widely based on predictions.

Besides all the factors influencing the company´s income-based value, there exists one factor in which the economic crisis has discovered a great paradox that the theory is not able to provide with relevant explanation. This factor is the discount rate. No matter what method is applied in order to calculate the cost of capital as the discount rate, there are two parts while the paradox is possible to be found in both of them. The first one is the cost of debts. During the economic crisis, interest rates have been decreased several times in order to support companies´ investments and subsequent economic growth.

The second part is cost of equity. All the methods of the cost of equity calculation, the CAPM included, using the risk-free rate as the basis that is increased for risk premiums. The

risk-free rate is determined as the long-term rate of government bonds because the theory supposes that if each company would bankrupt, the state goes to bankruptcy as the last organization however the practise shows that this premise is not necessarily valid. Nevertheless, if the risk-free rate is the interest rate on government bonds, the economic crisis witnessed decrease of this rate from about 4.5 per cent p.a. to 1.6 percent p.a. This is the decrease for almost 3 per cent points however the general risk in economy is much higher.

Such changes in interest rates have led to lower discount rates. The lower discount rate, the higher enterprise value, ceteris paribus. But as the risks in economy are growing, payment risk is increasing etc., in general the total enterprise risk is higher, the discount rate is supposed to reflect the risk of a business entity. So, the current question is how to solve this paradox in the business valuation theory because the practical experience points to theoretical inaccuracy.

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