Zagreb International Review of Economics & Business, Vol. 16, No. 2, pp. 39-56, 2013

ISSN 1331-5609; UDC: 33+65
CONFERENCE PAPER

Corporate Bankruptcy of Portuguese Firms

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Abstract: Over the time has been increasing the interest in understanding the subjects of insolvency and bankruptcy due to its consequences for the country's economic performance, and, actually, to its importance in the actual economic European context. The present work studies the evolution of bankruptcy of Portuguese firms in the last two decades, and obtains a set of macroeconomic factors which can explain this occurrence. It was considered the period 1990-2009, and the methodology used was a regression model including variables considerate in several empirical studies sustained in the literature review. The obtained results pointed to the relevance of macroeconomic variables as most significant explanatory variables for the Portuguese case.

Keywords: insolvency, bankruptcy, firms, internal and external causes, Portugal

JEL Classification: C22, G32, G33, D20

Introduction

The phenomenon of business failure can be explained considering the economic aspect and the legal aspect. The economic role of corporate insolvency relates to efficiency of resource allocation, employment, economic growth, and the occurrence and duration of crises. Bankruptcy, as the legal process, is an instrument of selection that has as main purpose to punish the debtor that has failed to comply with its obligations (Altman, 1993; Newton, 2003; Skeel, Jr, 2001). After a bankruptcy proceeding is instituted, creditors cannot pursue the debtors for payment until the

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bankruptcy is complete. According to Altman and Hotchkiss (2006), in result of the costs to companies due to corporate bankruptcy, it was necessary to create laws and measures to protect the contractual rights of all stakeholders.

For companies at risk of going into bankruptcy there are two options: reorganization or liquidation. It's necessary to verify if the company still manages to bring benefits to society as regards the supply of its goods and services, never forgetting that the reorganization would help secure jobs. It is these types of benefits that must be borne in mind before making a final decision as bankruptcy. If a firm chooses to reorganize itself, it must have a primary objective, which is to mitigate the liability of the debtor and restructure the company's capital and its organizational structure. When there is no possibility of recovery, the only alternative is liquidation. According to Altman and Hotchkiss (2006) the key variables are time and risk.

The term corporate bankruptcy was adopted by the company Dun & Bradstreet, which for many years provided relevant statistics to describe several poor business conditions. A company is in this unsatisfactory state when their obligations are beginning to be increasing over its assets (Altman and Hotchkiss, 2006).

Mário and Aquino (2004) describe the phenomenon of bankruptcy dividing it into two parts: one that represents the normal operation of the company, and other that begins with their insolvency to the entry in the bankruptcy proceeding. In their study, the first moment is the object of study, specifically, the failure prediction models, which seeks to identify, in advance, if a company enters into insolvency and subsequent bankruptcy (probability level study). This process is used mainly for analysis of credit (Mário, 2002). The other runs from the date of entry into a state of insolvency to the declaration of bankruptcy and his conduct involving the entire prosecution.

The phenomenon of bankruptcy is an increasingly likely to happen in modern society, influenced by factors that are within and outside the company. The market is extremely competitive and its tendency is to lead the business process operating on it to eliminate the "unfit". According to Schumpeter (1942) the phenomenon of bankruptcy is seen as a normal event, resulting in a cleansing effect on society and economy, thus eliminating those who are not efficient. And to White (1989:129) bankruptcy is "*the legal mechanism through which inefficient firms most often are eliminated*".

To understand the phenomenon of corporate bankruptcy, according to the available literature, it becomes necessary to analyze the available economic indicators, internal and external, to make it possible to understand which ones have a greater influence.

A low degree of liquidity is usually a result of internal factors that have settled in the company and may even have expressed their symptoms before a crisis itself installed. If there was an awareness of early detection of real problems, originated many times by the mismanagement of company resources, then interventions could be made quickly and effectively to prevent the economic crisis and possible entry into bankruptcy.

According to Helwege (2009), bankruptcy reduces the risk of hasty sales because assets are not sold quickly, since a bankruptcy filing occurs. After filing for bankruptcy, the money does not leave the company without the approval of a judge. With no pressure to pay debts, the company can remain for months in bankruptcy while trying to decide the best course of action.

The present paper is organized as follows: in the next section, we review briefly the literature; in a third section we describe evolution of bankruptcy of Portuguese companies; in a fourth section we present the data and its sources, as well the methodology used for the analysis; for in the following section present the results and discusses them. Last section concludes.

Literature Review

Many studies, empirical and theoretical, have been conducted in the field of bankruptcy and insolvency in different decades, different countries, and different economic sectors, leading to different conclusions.

The research about bankruptcy has been done in several areas and with different approaches (Hart, 2000; Wang, 2006). According to Wang (2006:4) the reviewing academic research on this topic concentrates in four main areas: corporate governance changes (e.g. White, 1989; Gilson, 1990; Franks and Sussman, 1999; Eckbo et al., 2003), bankruptcy costs (e.g. Warner, 1977; Altman, 1984, Weiss, 1990; Lubben, 2000; Bris, Welch and Zhu, 2006), stock prices and long-term performance (e.g. Gilson, Kose and Lang, 1990; Hotchkiss, 1995; Gilson, 1997; Altman, Eberhart and Aggarwal, 1999), the bankruptcy resolution (e.g. Bebchuk, Frank and Tourous, 1989; Eberhart, More and Roenfeldt, 1990; Aghion, Hart and Moore, 1992; Hart et al, 1997; Routlgde and Gadenne, 2000; Claessens and Klapper, 2006). But we found also many studies in prediction bankruptcy (e.g. Beaver, 1966, 1968; Altman, 1968; Ohlson, 1980; Campbell, 1996; Castilha, Gimenes and Uribe-Opazo, 2002; Beaver et al. 2005; Bernhardsen, 2005, Mario and Mario, 2007; Carvalho and Mario, 2007) and bankruptcy causes (e.g. Altman, 1986; Mário, 2005; Castilha, Gimenes and Uribe-Opazo, 2002; Altman and Hotchkiss, 2006; Leal and Machado, 2007; Ooghe and Prijcker, 2006, 2008).

On other side, the theories of bankruptcy suggest that micro and macroeconomic factors influence corporate insolvency (Wang, 2006; Jardim, 2011). We must also highlight the macroeconomic causes, because all companies are subjected to the economic conditions in the country where they operate. The need to select those that can operate efficiently in the market is known as natural selection in the business world (Alchian, 1950; Mathias, 1992).

Mário (2005) reveals that companies reach a bankruptcy state driven by both internal and external factors. The author concludes that there is a causal relationship between various macroeconomic variables and the phenomenon of bankruptcy, in

other words, the probability of the growth of bankruptcies and failures in the company's recovery is also related to the country's economic performance. By choosing variables such as Interest Rate, Inflation Rate, Carvalho and Mario (2007) proved that they have a good level of explanation of the variation in the bankruptcy rate. Still, even the authors pointed out that this analysis should be done by sector of the economy, particularly for those most susceptible to economic fluctuations.

The companies' size is also a relevant factor, in which some studies points for relevance to that most companies that go bankrupt are SMEs (e.g. Hall, 1992, 1994; Everett and Watson, 1998; Back, 2005; Pompe and Bilderbeek, 2005). According to Altman (1983) these tend to remain on the sidelines of the whole sector where they belong, which reveals they are most susceptible to the economic pressures imposed by the market. Despite being the smallest businesses the most affected, it can occur in any company, regardless of their size, a phase of economic decline (Drucker, 2006).

Bankruptcy Causes

About bankruptcy research causes, Altman (1986) conducted a study of nearly 6.000 companies that have failed in 1983, in which the main cause of failure attributed by analysts were the mistakes of bad management. In the study of Leal and Machado (2007), the main cause is in the exposure of the main features of the phenomenon of corporate bankruptcy. These authors chose the Portuguese textile industry as a study case and analyze financial ratios for predicting the occurrence of failures. They tried to prove that the anticipation of a financial crisis was possible, and thus it was enough that managers dedicated the most attention with regard to the instability displayed by certain financial indicators, and situations such as insolvency could be avoided. By othe side, Castilha, Gimenes and Uribe-Opazo (2002) conducted and analyzed predictive models of insolvency, focused on the farming sector, with the principal aim to identify through statistical procedures the relationship between financial ratios and profitability or the inability to meet obligations of an organization. They concluded for the relationship between the results of the financial ratios and the degree of corporate insolvency.

Altman and Hotchkiss (2006) pointed, as conclusion of their study, some reasons for the phenomenon of companies' failure:

- Companies in major economic downturn, such as agriculture, textiles;
- Deregulation of key industries where competition is much greater - airlines, financial services, medical, energy;
- High interest rates in some periods;
- International competitiveness.

By other side, Ooghe and Prijcker (2006, 2008) point for four causes of companies' failure: the general environment (external causes), the interactions between a company and its stakeholders, the company's corporate policy, and the characteristics of management. This last one is pointed as the major cause of bankruptcy.

Bankruptcy Prediction Models

Accounting plays an important role because it is seen as a data source for information about the performance of a company. The financial statements and financial indicators have great explanatory power and thus can be performed several studies on bankruptcy prediction. To accounting is assigned a role as a source of data and summary information that identifies the various transactions and economic measures in order to be able to use them together, summarizing them in demonstrations. Accounting has in every demonstration of each period, economic and financial information of the company. Each line of a demonstration gives information of what occurred in previous periods. This can be useful in predicting their behavior.

Considering that the financial indicators based on financial data have explanatory power (Beaver et al. 2005) it would justify its use as forecasting or estimating the probability of bankruptcy of companies, being Prob (Failure) = f (Financial Indicators) in which the dependent variable is a financial index (Mario and Carvalho, 2007). The studies on bankruptcy prediction are based on the assumption that the financial indicators based on financial data have explanatory power. However, Ohlson (1980) criticized the construction of these models because of the lack of a theory of bankruptcy. Since the work of Beaver (1966) and Altman (1968), the prediction of bankruptcy has been studied with great relevance.

A significant amount of work, addressing the issue of bankruptcy prediction, is found in the literature. Several techniques were used to create predictive models of the insolvency of companies.

According to Onusic, Casa Nova and Almeida (2007) the first study of companies in financial difficulties was carried out by Fitzpatrick in 1932. However, the lack of advanced tools for analysis of indicators made Fitzpatrick use methods of observation of some indicators of company performance, ranking them above or below a certain ideal pattern and comparing them over time. However, only from the 1960 decade, with the spread of statistical tools, the subject of study gained momentum.

Many studies have been written about forecasting models based on data from bankrupt companies, these data obtained in the financial statements or in market sources. Mário and Carvalho (2005) highlights the studies of Beaver (1967), Altman (1968), Ball and Brown (1969), Deakin (1972), Lev (1974), Altman et.al (1977), Kanitz (1978), Ohlson (1980), Hillegeist et.al (2002), Mário (2002), Mário and Aquino (2004) and Mário (2005). Other studies developed since the 1990s also show concern about the bankruptcy and reorganization/recovery, and its implications for all participants (e.g. Aghion et al 1992, 1993, Hart et al 1997, Hart, 2000). These are some studies, and in greater numbers in the literature on the subject based on the symptoms of the phenomenon, and not on its causes, this complementary approach.

Two types of accounting models are commonly discussed in the literature for bankruptcy prediction. The first types of accounting models are based in discrimi-

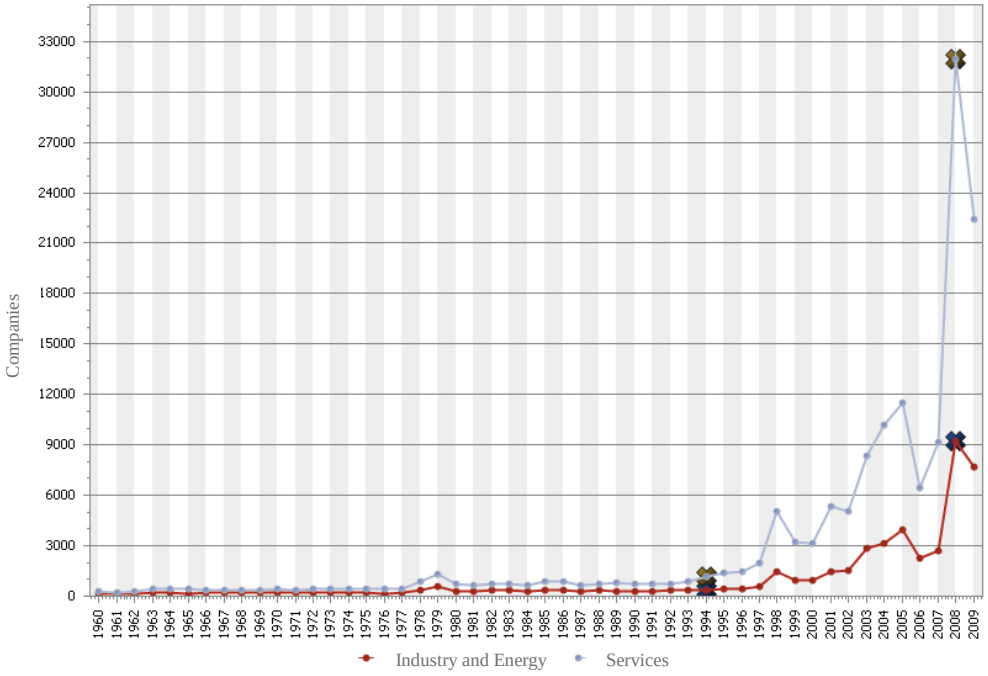
nant analysis and logistic regression models (e.g. Altman, 1983; Rodrigues, 1998). On the other hand, there are market-based models, for example, the KMV-Merton model based on Merton's (1974) bond pricing model. This second type of models is based on the market to determine the value of a company established in it. Share prices are used as substitutes for the value. Consequently, models based on market demand that companies are recorded in the stock market, and this is often not the case.

The linear discriminant analysis models have been widely used. The well-known Z-Score (Altman, 1968) is based on linear discriminant analysis. The generalized linear models, or multiple logistic regression models are also popular. The O-score (Ohlson, 1980) is based on generalized linear models with analysis from logit models.

The Portuguese Case

In Portugal, the evolution of the number of dissolved companies has increased sharply since the year 1994, having a higher peak in 2008, as presented in Figure 1. Some explanations for this fact are assign to institutional reasons, business reasons and the existing laws (IAPMEI, 1998).

Figure 1: Number of Dissolved Companies in Portugal between 1960-2009



Source: Pordata, consulted in 07/09/2011

Since 1997 the number of dissolved companies in the services sector increases above the 3000 companies, and in 2008 there were already 22.449 dissolved companies. In 2008, the effects of the Subprime crisis were felt immediately and can be observed a large peak corresponding to this year.

The time reducing required completing a bankruptcy process also contributed to the increase of the statistics of the number of dissolved companies, as we can see in Table 1. Between 1993 and 2009, the number of months was reducing continually, providing the difference of time between the begging of the legal process and his end of previews decades comparing to nowadays. The time required to complete the process of insolvency has been declining, reaching a value of 5 months, half since 2007, being the result of legislative changes made, however, with the approval of the new Code of Insolvency and Corporate Recovery.

Table 1: Number of months necessary to end the legal process

Years	Bankruptcy/Insolvency/Corporate Reorganization
1993	45
1994	36
1995	29
1996	25
1997	24
1998	23
1999	19
2000	19
2001	16
2002	15
2003	13
2004	12
2005	10
2006	9
2007	9
2008	7
2009	5

Source: Pordata, consulted in 07/09/2011

From Figure 2 we can note that the Portuguese districts of Lisbon and Oporto register the bigger number of company insolvencies in 2011. In the other districts, the insolvencies have growth essentially in the districts of Castelo Branco, Vila Real and Azores, and a decrease in the districts of Évora, Portalegre e Coimbra.

Figure 2: Company Insolvencies by Portuguese's Districts

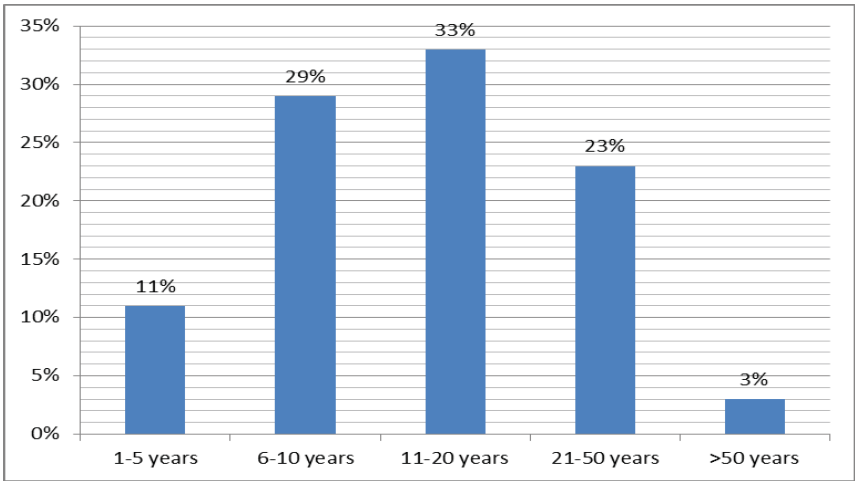
Portuguese Districts	2009	2010	2011	Var.
AVEIRO	95	101	89	-11,88%
BRAGA	175	175	173	-1,14%
BRAGANCA	10	6	6	0,00%
CASTELO BRANCO	16	12	23	91,67%
COIMBRA	32	49	30	-38,78%
EVORA	11	20	12	-40,00%
FARO	18	27	29	7,41%
GUARDA	7	9	7	-22,22%
LEIRIA	51	51	75	47,06%
LISBOA	197	226	258	14,16%
PORTALEGRE	2	11	4	-63,64%
PORTO	277	278	279	0,36%
SANTARÉM	37	36	39	8,33%
SETUBAL	34	42	52	23,81%
VIANA DO CASTELO	19	22	18	-18,18%
VILA REAL	6	5	13	160,00%
VISEU	32	30	28	-6,67%
AÇORES	9	3	6	100,00%
MADEIRA	18	23	22	-4,35%
BEJA	3	5	5	0,00%

Source: Instituto Informador Comercial, 2011, consulted in 25/05/2011

However, Altman (1993) demonstrates that bankruptcy is a global concern and notes that in the United States about 50% of businesses close before reaching five years of existence. For its part, Ferreira (2006) made similar studies in Brazil and found that between 60% and 70% of companies cease their activities in their first five years. According to Drucker (2006), this is part of their organizational life cycle. Other studies confirm the relationship (e.g. Fichman and Levinthal, 1991; Greiner, 1998; Kale and Arditi, 1998; Thornhill and Amit, 2003).

For the Portuguese case, most of corporate failures (73%) are from companies in their first 20 years of life cycle, as presented in Figure 3. Analyzing Figure 3, it can be seen that if a company survive their first 20 years of life cycle, can reduce their probability of bankruptcy. This may be the result of an accumulation of market share, given that managed to survive to the pressure from competitors and to the constant changes in the economic structure of the country.

Figure 3: Percentage of Insolvency/Banckruptcy according to Companies Life Cycle



Source: Jardim (2011:39)

The Subprime Crisis and its Consequences in the Portuguese Economy

The Subprime crisis triggered a financial crisis in 2007, due to losses from credit institutions of the United States, which granted mortgage loans to high risk. Its effect was felt worldwide, with the result that many banks were insolvent and reflecting heavily on stock exchanges around the world. The *Subprime* crisis can be considered the most serious crisis since the Great Depression in 1929, which might cause chain termination payments in the global economy, which would reach all economic sectors.

The loans were granted to customers who do not meet the necessary conditions to obtain them, who had no income, jobs or assets. This was only possible because the continued recovery of the property which allowed to obtain new loans and the property as collateral. Interest rates were post-fixed (determined at the time of payment of debts) and when interest rates soared in the United States with the dramatic fall in house prices, many banks were led to a situation of insolvency, which was felt on stock markets worldwide. To which was added the failure of the traditional investment bank Lehman Brothers, founded 1850, in global financial markets triggered concerns of a systemic effect.

The impact of disruptions in the financial system on the world economy has worsened since the end of 2007. The Portuguese economy has also felt the impact of international financial crisis and the deteriorating outlook for economic growth worldwide. Thus, in summary of what was said earlier, there was a peak in 2008 of the number of companies in dissolution (Figure 1), and the number of months needed to complete a legal process has also declined since 2007. The subprime crisis has shown, so its effects on corporate bankruptcy Portuguese.

Data and Methodology

The present study examines the influence of macroeconomic variables in the bankruptcy rate of Portuguese firms. There were several authors, who over time have been applying new analytical methods to study the phenomenon of corporate bankruptcy. For example, Altman (1986) argued the importance of internal factors; instead Schumpeter (1942) defended the strength of competition in the markets, enhancing the external factors. Table 2 shows some econometric models applied to the study of corporate bankruptcy.

Table 2: Some Econometric Studies related to Corporate Bankruptcy and Insolvency

Authors	Chosen Variables	Performed Model
Fitzpatrick (1932)	Net Profit/Capital Equity	Univariant Model
	Capital Equity/Total Liabilities	
Edmister (1972)	Cash Flow/Short Run Liablilities	Multivariate Model (Dichotomous Linear Regression)
	Capital Equity/Sales	
	Current Assets/Sales	
	Short Run Liabilities/Capital Equity	
	Stocks/Sales	
	Reduced Liquidity/Average Reduced Liquidity of three years under review	
	Reduced Liquidity/Average Reduced Liquidy from sector	
Altman (1983)	Growth of economic activity	Logistic Model
	Credit Availability	
	Activity in the capital market	
	Population Companies Characteristic	
	Price level change	
Altman (1984)	Sales of firm	Regression
	Sales of industry	
	Profits	
	Average historical profit margin	
	Bankruptcy costs (direct and indirect)	
Rodrigues (1998)	Retained Earnings/Total Assets	Multivariate Model (Discriminant Analysis)
	Interest Expenses/Tota Income	
Mário e Carvalho (2007)	Inflation	Polynomial Regression
	New Business	
	Tax Burden	
	Interest Rate	
	Monetary Resources	
Feki e Khoufi (2007)	Economic Health	Generalized Method of Moments
	Inflation	
	Monetary Policy (price level variation)	
	Level of economic openness	
Friedrichs, Salman e Shukur (2009)	Changes in price levels	Error Correction Model
	Wage increases	
	Level of economic oppeness	
	Management effectiveness and adequacy of its capital	

Source: Adapted from Santos (2000), Mourão and Oliveira (2010), and Jardim (2011)

The data collected with the purpose of studying the variables that influence the bankruptcy rate of Portuguese companies were taken from the database *Pordata*, The World Bank and the European Central Bank, for the period between 1990 and 2009.

Based on the literature review we apply the regressive model, Ordinary of Least Squares (OLS), using time series data, based on Mário and Carvalho (2007). The model given by equation (1) includes the following variables: the Bankruptcy Rate (*BankuptcyRate*), the Gross Domestic Product (*GDP*), the Consumer Price Index (*CPI*), New Businesses (*NEW*), Foreign Direct Investment (*FDI*) and Domestic Credit (*Credit*).

$$BankruptcyRatet = \beta 0 + \beta 1CPIt + \beta 2FDIt + \beta 3NEWt + \\ + \beta 4GDPt + \beta 5Creditt + \beta 6Dummyt + Ut \quad (1)$$

In the model was added a dummy variable (*Dummy*) to capture the effects of the Subprime crisis in the bankruptcy rate in Portugal, where the value 0 is assigned to the years from 1990 to 2007 and value 1 for the years 2007 till 2009.

The bankruptcy rate, which is the dependent variable, was obtained from the ratio between the dissolved and existing companies, based on the study of Mário and Carvalho (2007). As for the independent variables: GDP at constant prices (with base = 2006), the CPI measured in %, New Business, FDI, and Domestic Credit as a % of GDP.

The expected signs of the variables regarding the literature reviewed are:

- For the GDP it is expected an inverse relationship between bankruptcy rate and GDP (negative sign), since GDP growth represents an economic growth in the country. Which will have a positive implication for all the companies, as it is considered a direct driver in improving sales and profits of industries in general (Carvalho and Mário, 2007). The companies have a much greater chance of withstanding the pressure of the market if there is improvement in the economic conditions surrounding.
- For CPI, increases in the inflation rate can affect the bankruptcy rate, increasing it when you have in mind the cumulative effect over the long term. Companies may not have internal conditions to get to compete in a different economic structure. Liu and Wilson (2000) argue that an increase in inflation would raise the cost of borrowing for companies with regard to payment of the debts of the company.
- New Business: the emergence of new companies in the market increases competition in the face of existing businesses, especially if it is a sector that provides large profits, attracting new business. Some companies may not support certain costs that will occur to those entries. The relationship expected is a reverse effect between the bankruptcy rate and the new businesses. The growth of the sector means that some companies declare bankruptcy, leading to a purification effect of the market (Schumpeter, 1942).

- The higher the FDI in Portugal, the lower the failure rate will be, taken the fact that the foreign investment in existing companies could prevent the lack of liquidity and improve the internal management (Zebib and Muoghalu, 1997). The expected relationship is an inverse relationship.
- For the Credit is expected an inverse relationship because the higher the possibility of credit, the lower the hypothesis of a company need to go into bankruptcy (Altman, 1983).

The data in model present in equation (1) was analyzed, and to get better results the variables follow several tests, i.e. to autocorrelation, to problems of multicollinearity, stationarity, and heteroskedasticity. The model was tested for the presence of autocorrelation and heteroskedasticity and it showed no problems that needed to be fixed.

Empirical Results

After testing for the problems mentioned above, the model in (2) was obtained with all the variables already stationary, and now the explained variable is D1 BankruptcyRate(D1 represents the first difference, D2 represents the second difference):

$$D1BankruptcyRatet = \beta 0 + \beta 1D1CPIt + \beta 2FDIt + \beta 3D1NEWt + \\ + \beta 4D2GDPt + \beta 5D1Creditt + \beta 6Dummyt + Ut \quad (1)$$

Table 3 shows the values obtained for the model (2). Although not all variables are shown to be individually significant, the model is globally significant, with a coefficient of determination of 66%. The variables CPI, FDI, GDP, Credit and Dummy (subprime crisis) were significant at 5%.

Table 3: Regression Model with Stationary Variables

Variables	model
Constant	0,866092**
	(2,588769)
D1CPI	0,447517**
	(2,788125)
FDI	-6,20E-11
	(-0,947068)
D2GDP	-1,60E-07**
	-2,631971
D1CREDIT	-0,067979**
	(-2,280732)
D1NEWS	1,37E-05
	(0,482207)

Variables	model
DUMMY	1,139137**
	(2,651238)
R-squared	0,66
Adjusted R-squared	0,47
Prob(F-statistic)	0,035
Durbin-Watson stat	2,51

t statistics in parentheses, p<0,01%; p<0,05%**, p< 0,10%

After, it was applied the Granger Causality test for determine whether one variable can explain another (Granger, 1969). When analyzing the Granger Causality Test summarized in Table 4, we can see that there is bidirectional causality between the CPI and the Bankruptcy Rate, i.e., the previous data from the CPI have an influence on the present data from the bankruptcy rate and the reverse is also true. Also, there is a unidirectional causality between bankruptcy rate and the FDI, so the past data of FDI influences the present data of the bankruptcy rate.

Table 4: Results from Granger Causality Test

Granger Causality	Test F (2 lags)
D1CPI → D1Bankruptcy Rate	5,15094
D1Bankruptcy Rate → D1CPI	10,8824
FDI → D1Bankruptcy Rate	9,50552

The analysis of the expected signs compared to signals obtained for each variable, we can infer some findings:

- There is a direct relationship between the CPI and the bankruptcy rate because the cumulative impact of an increase in the CPI has direct consequences in the long-term bankruptcy rate. Given the estimated coefficients (Table 3), it is expected that a 1% increase in the CPI causes a 0.44% increase in the bankruptcy rate, *ceteris paribus*.
- One can observe an inverse relationship between the bankruptcy rate and FDI, since higher the FDI in Portugal, the companies that receive it will face lower financial difficulties therefore, the lower the bankruptcy rate.
- There is an inverse relationship between GDP and the bankruptcy rate, it can be justified by the increase in GDP, which will thereby increase the country's economic growth, having an impact on the bankruptcy rate, decreasing it.
- The inverse relationship between the rate loans and the bankruptcy rate revealed that the higher the credit available to companies lower the slope of a bankrupt company. Thus, it is estimated that a 1% increase in domestic credit will lead to a decrease in the 0.06% failure rate, *ceteris paribus*.

There is a direct enters the failure rate of new companies and the variable is reflected in the entry of new competitors into the market, which will make inefficient companies fail to extend their business, leaving the market (Mario and Carvalho, 2007).

The dummy variable included in the model, based on the subprime crisis of 2007, which is assigned the value zero until later this year and this year it is assigned a value. We can find that this variable has a significant impact in explaining the model, so when the effects of the subprime crisis are present in the economy of a country, increases the banruptcy rate. The collapse of the U.S. economy has spread to the world, leading many financial institutions into bankruptcy, threatening the global financial system.

Conclusions

As Schumpeter (1942) claims, the globalization has brought increased competition and competitiveness. Several studies have been conducted to explain which variables have more impact on bankruptcy rate. According to Altman (1986) the main cause of bankruptcy was corporate mismanagement (internal factor). Mário and Aquino (2004) chose external factors, such as interest rate and inflation rate, to prove that a company is affected by changes in economic indicators of a country. Thus, the business bankruptcy can be explained by internal and external causes.

In order to study the corporate bankruptcy of Portuguese companies, the analysis in this study gathered data from 1990 to 2009 of macroeconomic variables, allowing to conclude that the rate of inflation influences the rate of bankruptcy, that there is a direct relationship between the two variables, and concluded that FDI has an impact on the bankruptcy rate, but with an inverse relationship between both variables. The inflation rate turns out to be an economic variable relevant to this analysis, showing how a change in the economy of one country interferes with the bankruptcy rate in the future. The FDI shows the importance of foreign investment in Portuguese companies, so to prevent the lack of liquidity and improving internal management capabilities, the company can make its business more efficient, ensuring its place among the competition.

The variables that positively influence the bankruptcy rate are the CPI and New Business, the latter being representative of market competition, revealing that not all businesses operate efficiently. FDI, GDP and Domestic Credit reveal an inverse relationship with the bankruptcy rate, representing the importance of economic growth of the country, of methods of financing and foreign investment support. It was also added a dummy variable to represent the impact of the crisis felt worldwide, Subprime. This variable proved to be significant, which highlighted the global connectivity of all economies, revealing that a global crisis will affect the bankruptcy rate in Portugal, increasing it.

In terms of work limitations, the study lacks of a larger data sample and the inclusion of other exogenous variables. For future studies, it would be interesting to use economic variables and social variables. Understanding the extent to which the level of education, poverty, the type of policy, as some examples, influences the business failure in a country. Also the study of microeconomic variables, endogenous to the firms, such as management, organization and production, may be some approaches for further analysis. Corporate mismanagement, lack of entrepreneurial skills and lack of cash flow are some of the endogenous factors to consider.

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