Academia Revista Latinoamericana de Administración

Business failure: incidence of stakeholders' behavior

Alba Maria Priego, Montserrat Manzaneque Lizano, Elena Merino Madrid,

Business failure: incidence of stakeholders' behavior

Alba Maria Priego and Montserrat Manzaneque Lizano
Business Administration, Universidad de Castilla-La Mancha, Cuenca, Spain, and
Elena Merino Madrid
Business Administration, Universidad de Castilla-La Mancha, Ciudad Real, Spain

Received 27 November 2012
Revised 2 December 2013
Accepted 6 December 2013

Abstract

Purpose – The purpose of this paper is to analyze the potential impact of stakeholders' behavior on business failure, through its influence on the generation and distribution of value added.

Design/methodology/approach – Using a sample of 2,277 Spanish SMEs – half of which were businesses that failed during the years 2006-2009 – the authors conducted an empirical study on a number of variables representing the participation of stakeholders in the generation and distribution of value added. This was undertaken in order to discern differential behavior between the variables and prove their usefulness in predicting business failure. For this purpose, a mean difference analysis between failed and non-failed businesses and a multivariate logistic regression model were applied.

Findings – The results obtained show that the stakeholders' behavior in relation to their participation in the generation and distribution of value added, affects the likelihood of business failure.

Originality/value – This paper provides empirical evidence of the influence of stakeholders' behavior on the likelihood of business failure, through their participation in the generation and distribution of value added. The results are useful for creating management strategies because they offer advice on the implementation of business management models based on the stakeholder approach, and on the appropriate involvement of all those who make up the conglomerate in the generation and distribution of value added. They also emphasize the value of recording information related to the Value-Added Statement in order to explain a firm's level of dependence on its stakeholders and assess the firm's risk of insolvency.

Keywords Stakeholders, Logistic regression, Business failure, Economic value added

Paper type Research paper

Introduction

It is essential to analyze and evaluate the facts that lead to a firm's different degrees of economic and financial difficulty in order to be able to demonstrate the possible causes that have induced business failure. Although, this study can be dismissed as outdated in time (ex-post analysis) and, therefore, unhelpful in resolving or repairing past situations, history has shown that events – such as the global economic crises suffered in 1929 or 1973 – tend to repeat themselves. Thus, it is important to identify the causes that provoke the failure of a certain firm and learn from such causes in order to avoid any similar situations occurring in the future.

Given this undeniable reality, and within the depressive contexts in which the economy is immersed, the question that one might ask is why some firms survive and others do not, all being subject to the same or similar economic and financial phenomena. These outcomes, at times disparate, should capture the interest of scholars and researchers as to what the unique business and individual capacities to manage and overcome a crisis actually are.

Academia Revista Latinoamericana de Administración
Vol. 27 No. 1, 2014
pp. 75-91

1012-8255
DOI 10.1108/ARLA-12-2013-0188

In this line of work, recent studies are incorporating a new perspective, which highlights the incidence of the behavior of a firm's interest groups or stakeholders in the process of business failure as relevant aspects (Kane *et al.*, 2005; Pajunen, 2006; Priego *et al.*, 2012). The firm's dependence on the groups or organizations it interacts with is revealed as a key factor of business success.

This situation is most evident in processes of corporate crisis, whereby the survival of the firm depends on, among other things, agreements and assignments that occur between all groups or stakeholders involved. Those with greater capacity and bargaining power will ultimately impose their requirements against the rest.

Following the fundamentals of Stakeholder Theory (Freeman, 1984; Freeman and Gilbert, 1988), which focusses on the qualitative aspects that influence the degree of difficulty the enterprise is undergoing, and that are, in turn, largely defined by its level of dependency on the groups that make up the business coalition, this paper empirically analyzes the behavior of stakeholders in business failure. This is undertaken by analyzing their participation in the generation and distribution of value added using financial indicators prepared with information from the Added Value Statements, which serve as explanatory variables of their behaviors.

The results obtained from the application of the statistical techniques of univariate and multivariate analyses show that the behaviors of the stakeholders may improve knowledge of business failure processes through the identification of certain factors that contribute to its development. In this way, they can establish bases for future research to also incorporate qualitative factors related to stakeholders' behaviors to increase the predictive potential, contributing to the debate on relations with stakeholders as a significant contextual factor to consider in business risk management.

In brief, this work contributes to the understanding and knowledge of business failure from a quantitative and qualitative perspective, opening up new avenues in expanding business risk management, based on firm-stakeholder relationships. Following the introduction, the paper covers the theoretical background and approaches of the hypothesis, methodology, analysis of results, conclusions and bibliography.

Theoretical background and hypothesis approach

The importance of considering the dependence of the firm on its interest groups or stakeholders (management, employees, customers, suppliers, financial institutions, general public, etc.), for a normal and harmonious development of its activity was recognized by authors such as Keasey and Watson (1991) and Kane *et al.* (2005), among others.

The recent global economic and financial crisis has redirected certain actions and management processes. The necessary cooperation of a firm's stakeholders or shareholders has been incorporated into its strategy, in order to ensure its future survival. It should be noted, for example, that the credit strangulation undertaken by financial institutions on businesses in recent years (Crouhy *et al.*, 2006), has crippled profitable investment. This has hindered the possibility of recovery for distressed firms and has frustrated the growth of the overall economy (Priego *et al.*, 2012).

The proposition that the behavior or conduct of stakeholders can play a significant role in processes associated to business failure is not so recent. Kane *et al.* (2005) highlight firms' capabilities to develop in order to relate, communicate and evaluate (weigh) the needs and demands of their stakeholders as relevant factors in relation to

the likelihood of experiencing business failure. For his part, Jones (1995) highlights the problems of opportunism and lack of trust and cooperation among stakeholders as a real problem in the firm-stakeholder relationship, which could affect the business. Granda and Trujillo (2011) also warn of the need to manage firm-stakeholder relationships to minimize the risks of business failure.

From a theoretical point of view, this approach is reflected in the so-called "Stakeholder Theory," whose main contribution is based on the belief that "the essential mission of the firm consists in conveniently satisfying different interest groups or stakeholders" (Freeman *et al.*, 2010), in order to achieve an adequate return and increased wealth for the firm in the medium and long term (Pava and Krausz, 1997).

This theory takes a comprehensive view of the firm, trying, not only to identify problems derived from firm-stakeholder relationships, but also to respond to them, making favorable decisions that take into consideration the interests of all stakeholders or interest groups in order to reduce possible tensions between them (Lorca, 2003).

These theoretical approaches have changed business objectives, dynamizing an integral perspective that includes the individual interests of all stakeholders involved in the creation of value.

The way in which firms conduct the generation and distribution of value added undoubtedly constitutes one of the economic indicators relevant to their relationship with stakeholders. Generating value as a goal includes and harmonizes all the demands of each of the stakeholders who make up the firm, while its distribution symbolizes the firm's ability to meet those demands and weigh up the potential conflicts that may arise, as each stakeholder will attempt to appropriate the maximum amount of value added to satisfy their own needs.

These, along with other reasons, have been fundamental in guiding the main objective of this research, delimited to the contribution of empirical evidence with respect to the impact of stakeholder behavior. The study looks at how to set the generation and distribution of value added between these two factors and their impact on the future development of the firm. Generation and distribution would trigger either the firm's success or business failure and, in turn, its ability to provide economic and financial information in its financial statements to explain the behavior resulting from the management of the firm's dependency with respect to each of these factors.

Accordingly, this line of reasoning has led to the following general hypotheses:

H1. The stakeholders' patterns of behavior in relation to their participation in the generation and distribution of value added is one of the predictors of the existence of a possible business failure situation.

In order to be more specific, this hypothesis has been disaggregated into the following sub-hypotheses:

H1a. There are significant differences in the stakeholders' patterns of behavior in terms of the generation of value added between the failed and non-failed firms.

H1b. There are significant differences in the stakeholders' patterns of behavior in the distribution of value added between the failed and non-failed firms.

The hypothesis also seeks to provide empirical evidence on the usefulness of indicators drawn from the State of Value Added and present the behavior of the stakeholders in predicting future business failure, for which the following sub-hypothesis was defined:

H1c. The stakeholders' patterns of behavior in relation to their participation in the generation and distribution of value added, provides useful information to predict a future state of business failure.

Research methodology

Dependent variable: business failure

Many of the previous works on business failure prediction have used a legal definition of this phenomenon. This choice has responded to the fact that the legal definition is objective and rigorous (Mora, 1994) compared to other alternative descriptions of business failure (inability of the firm to meet payment obligations, negative returns, etc.), comprises a dated event (Keasey and Watson, 1991), and avoids the problems of other definitions based on financial data (income, liquidity, etc.) by the predictor variables that coincide with the definition of a firm's own failure (Jones, 1987). These reasons have influenced the choice of legal failure in this study, with such firms being considered candidates for bankruptcy or dissolution.

Measurement of the generation and distribution of income between the stakeholders: value added and ratios representative

A choice of this magnitude represents the stakeholders' response and, as already stated, is considered one of the most important economic indicators to measure the behaviors that stem from the firm's relationship with its stakeholders. This can be expressed in terms of income generation and distribution (Stewart, 1994), an aspect of great importance given the approach of this research.

In addition, considering the value added as an indicator of business activity allows a more rational assessment of efficiency and productivity, providing a general overview of the result of the production process due to collaboration between the stakeholders involved. Therefore, it is a measure of the efficiency of management, as it links the production obtained with the factors that contribute to its generation.

In this regard, the value added is defined as the income generated by the firm during a period of time, meaning the rent difference "between the profit from current operations and the cost of capital that have been involved in the generation of it" (Deyá, 2004, p. 105).

Value added is an economic magnitude that provides information on both surplus generation and its distribution between the stakeholders that have been involved in its production, constituting, in turn, a reference point for dialogue and negotiation (Carrillo and Niño, 2006).

The magnitude, representative of the value added, has the advantage that it is a measure of income that can be drawn from published accounting information (Bannister and Belkaoui, 1991). This allows the calculation, analysis and research from an additive or distribution perspective through the combination of the following elements (Archel *et al.*, 2009):

$$AV = S + I + D + T + A + P$$

where S is the staff remuneration, including social charges; I the interest on debt; D the dividends paid to shareholders; T the direct taxes; A the amortization; P the profit retained by the firm (reserves).

Two sources of information have been used for this: the profit and loss account and the proposed distribution of profits (memory). As for the determination of behavior of the different stakeholders in the participation of the generation and distribution of value added, we have taken the ratios shown in Table I and they respond to the research objectives.

Some of the ratios, such as the value added to sales (Platt and Platt, 2002), personnel costs to value added (García Pérez de Lema *et al.*, 1995), or financial expenses to value added (García Pérez de Lema *et al.*, 1995; Lizarraga, 1997) have been identified as variables that are predictive of business failure in previous studies.

Sample design

To test the proposed hypotheses, we have worked with a sample of SMEs (small and medium firms according to Recommendation 2003/361/EC of May 6, 2003 (European Commission, 2003), according to the criteria: number of employees, turnover and total asset figure balance) in Spain. The selection of this sample of firms responds to the fundamental role of their local, regional and national levels in maintaining employment intensity, consumption of raw materials sourced locally or regionally, and capacity to promote economic activity and adapt to the media in which it operates with some flexibility.

Specifically, we have taken into consideration firms that, during the year 2010 (n), have experienced any one of the following circumstances: bankruptcy (Law 22/2003 of 9 July); termination or dissolution, in order to begin processes that lead to settlement through judicial process (three cases); or private settlement agreements, which, for particular reasons (costs, legal requirements, etc.), have not required legal procedures that regulate such circumstances (last case).

For this purpose, we selected a sample of 2,277 previously failed firms, matching them to non-failed firms (active). In order to perform subsequent contrasts, we discerned differential behavior between each of the firms, in the years prior to failure, encompassing, in this way, the study period for the years 2006, 2007, 2008 and 2009. Following previous work (López *et al.*, 1998), selected matching criteria was firm size (total assets), measured by total assets, industry and number of employees. Thus, we have obtained a total sample of 4,544 Spanish SMEs from the SABI database (Analysis Services-Economic Information Iberian Balance SA).

Having identified the firms that meet these criteria, some were then eliminated through a filtering process due to the following reasons: first, the existence of accounting silences or missing data; and second, ratios with extreme values or outliers, considered as such, those that exceed 2.5 times the standard deviation (López *et al.*, 1998). Therefore, the final sample was made up of 3,014 Spanish SMEs.

Statistical methods employed

The stakeholders' behavior was assessed by applying two different statistical procedures, both using Statistical Package for Socials Sciences version 17, in Spanish:

(1) univariate analysis of mean difference between two sub-samples drawn from the same population, in order to observe how each of them contribute to explaining the differences between the two groups of firms; and

Table I.
Explanatory variables of stakeholders' behavior

Variables	Interpretation of the variables	Nomenclature	Relationship or expected sign[a]
Added value generated by shareholders	$\frac{\text{Added value}}{\text{Equity}}$	GACC	−
Added value generated by workers	$\frac{\text{Added value}}{\text{Average number of workers}}$	GTRAN	−
Added value generated by the financial creditors	$\frac{\text{Addedvalue}}{\text{Liabitilies}}$	GACR	−
Added value generated by customers	$\frac{\text{Added value}}{\text{Net sales}}$	GCLI	−
Added value generated by suppliers	$\frac{\text{Added value}}{\text{Cost of sales}}$	GPRO	−
Added value distributed to shareholders	$\frac{\text{Dividends and other shareholders incomes}}{\text{Added value}}$	DACC	−
Added value distributed to workers	$\frac{\text{Costs of wages and salaries}}{\text{Added value}}$	DTRA	+
Added value distributed to creditors	$\frac{\text{Financial expenses}}{\text{Added value}}$	DACR	+
Added value distributed to the state	$\frac{\text{Taxes}}{\text{Added value}}$	DEST	−
Added value distributed to the firm	$\frac{\text{Fixed asset amortization and reserves}}{\text{Added value}}$	DEMPAUT	−

Note: Generation and distribution of value added. [a]The dependent variable is measured as a dummy variable that takes the value 1 if the firm is considered failed and 0 otherwise
Source: Priego (2012)

(2) multivariate analysis through the creation of binary logistic regression models, as they allow models of corporate insolvency prediction to be built for the two groups defined: failed business (1) non-failed business (0).

Results

Evidence of business failure caused by stakeholders' behavior regarding the generation and distribution of value added

The results of the univariate analysis of mean difference (Tables II and III) reveal a different pattern between the stakeholders' behavior related to failed and non-failed businesses in terms of their participation in the generation and distribution of value added. So, *H1a* and *H1b* are corroborated.

Also, the result of the Mann-Whitney *U* contrast of significance shows a significant different mean (p-value <0.05) for both groups (failed and non-failed business).

According to these results, we can make the following observations.

Regarding the behavior of the different stakeholders in the share of "value-added generation."

The shareholders of failed businesses do not seem to respond by providing financial support for the businesses, so that the amount of equity is gradually reduced. This is a result of the accumulated losses from previous years (see Table II). This behavior may respond to a clear disincentive brought about by accumulated losses that impair the shareholders ability to sense liquidity in case of bankruptcy (Mora, 1994; Laborda, 2005), given their low priority in the recovery order, against other stakeholders (Law 22/2003 of July 9). In this sense, the GACC indicator meets the study expectations for the years 2006 and 2009, which were higher in non-failed business, although in the years 2007 and 2008, the opposite was true. A thorough analysis of the data shows that the failed businesses substantially increase sales in those years, perhaps in a desperate attempt to solve the situation. This attitude reflects higher value added and, therefore, a higher GACC ratio, although, essentially, the equity declined in this period. Ultimately, the future of the firm depends on the degree to which investors or shareholders believe that the firm is able to generate value added in the future and that they will receive a portion of it. The orientation of business objectives to management practices based on "creating shareholder value" (Rappaport, 1998) is, therefore, a way to avoid future situations of business failure.

In relation to the generation of value added by workers, this is lower in firms that do not survive the process of economic and financial crisis, although this relationship is only evident two years before the failure (2008 and 2009), corroborating *H1a*. This behavior could be evidenced by:

(1) the proliferation of an unfavorable and negative attitude on the part of workers toward the realization of effective and efficient work for the firm (Belkaoui, 1984; Gallizo, 2000); and

(2) a decrease in labor productivity (Banegas *et al.*, 1998; Belkaoui, 1984; Pérez-Carballo *et al.*, 1989).

In economic terms, it is argued that workers represent a very powerful interest group within the firm (McDonald, 1993). This means that if their interests and necessities are not included as business objectives, the industrial harmony and productivity could be at risk and, thus, affect the quality of customer service and ultimately, profitability.

Table II.
Descriptive analysis of mean for the variables that make up the indicators and results of the Univariate Analysis of Mean Difference

	Failed businesses				Non-failed businesses			
	2009	2008	2007	2006	2009	2008	2007	2006
Added value generation								
Added value	393.65	721.44	884.47	811.72	630.19	730.95	759.36	693.83
Equity	257.11	578.85	673.48	673.79	1,137.06	1,111.77	1,000.59	893.58
Average number of workers	17.88	17.88	17.88	17.88	16.44	16.44	16.44	16.44
Liabilities	2,082.25	2,475.93	2,344.62	2,070.99	1,424.83	1,557.07	1,577.73	1,416.68
Net sales	1,955.02	3,194.68	3,373.97	3,174.59	2,019.85	2,427.84	2,573.40	2,384.80
Cost of sales	1,200.55	2,131.66	2,160.20	1,945.73	1,143.89	1,517.39	1,619.34	1,400.11
Added value distribution								
Dividends and other shareholders' incomes	27.30	59.37	93.34	77.89	69.66	103.53	124.58	99.86
Costs of wages and salaries	562.58	693.82	654.54	618.76	520.25	551.70	510.90	475.27
Financial expenses	70.88	102.81	74.78	51.12	43.43	57.20	44.18	30.86
Taxes	−21.10	−7.65	26.60	28.83	−1.07	−0.40	39.24	43.88
Fixed asset amortizaion and reserves	678.21	685.18	641.06	607.25	952.72	861.32	757.83	681.43
				Significance contrasts				
		U-Mann-Whitney				*t*-test		
Variables[a]	2006	2007	2008	2009	2006	2007	2008	2009
GACC	*0.000*	*0.000*	*0.000*	*0.000*	0.852	0.141	0.847	0.578
GTRAN	*0.000*	*0.000*	0.345	*0.000*	0.362	0.087	0.362	*0.000*
GACR	*0.000*	*0.000*	*0.000*	*0.000*	0.144	0.018	*0.002*	*0.000*
GCLI	*0.000*	0.011	*0.000*	*0.000*	*0.004*	0.063	*0.002*	0.008
GPRV	0.028	0.199	*0.000*	*0.000*	0.005	0.037	*0.004*	0.207
DACC	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	0.001	*0.005*	*0.003*
DTRA	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	0.003	0.853	0.355
DACR	*0.000*	*0.000*	*0.000*	0.008	*0.003*	0.089	0.452	*0.004*
DEST	*0.000*	*0.000*	*0.000*	*0.000*	*0.005*	0.341	0.128	0.385
DEMPAUT	0.026	0.007	*0.000*	*0.000*	0.759	0.181	0.481	0.449

Note: [a]Variables are described in Table I
Source: Authors' own

Variables[a]	Estado	Mean 2006	2007	2008	2009
GACC	Failed businesses	3.5080	3.6606	3.2568	1.5738
	Non-failed businesses	3.7552	2.6122	3.1228	1.8456
GTRAN	Failed businesses	69.3503	75.7154	52.8075	20.8668
	Non-failed businesses	64.4644	66.2395	59.5819	46.2355
GACR	Failed businesses	62.9060	55.4188	48.8865	40.1930
	Non-failed businesses	74.0896	81.9805	70.7805	73.7069
GCLI	Failed businesses	0.4361	0.4406	0.3786	0.3317
	Non-failed businesses	0.7745	0.5849	1.0283	0.5843
GPRO	Failed businesses	3.8049	3.4181	3.4636	3.1437
	Non-failed businesses	6.0647	10.4719	8.0831	6.2895
DACC	Failed businesses	0.0785	0.0911	0.0581	0.0442
	Non-failed businesses	0.1132	0.1904	0.2207	0.1010
DTRA	Failed businesses	0.8478	0.7936	0.8129	1.0081
	Non-failed businesses	0.6753	0.6539	0.8385	0.8392
DACR	Failed businesses	0.0655	0.0814	0.0948	0.0895
	Non-failed businesses	0.0460	0.0541	0.0303	0.0331
DEST	Failed businesses	0.0133	0.0072	0.0251	0.0437
	Non-failed businesses	0.0412	0.0208	0.699	0.0600
DEMPAUT	Failed businesses	0.0988	0.1017	0.1222	0.1025
	Non-failed businesses	0.1022	0.8930	0.1035	0.1462

Note: [a]Variables are described in Table I
Source: Authors' own

Table III.
Variables average value for failed and non-failed businesses

According to the results obtained in this study, the differences in the GTRAN ratio between failed and non-failed businesses (years 2008 and 2009) brought to light that the business structure, measured in terms of volume (number of employees), is higher in the first type of business, reinforcing the arguments presented and ratifying low-productivity rates in this case.

Regarding the participation of the financial creditor in the generation of value added (GACR), the results also confirm compliance with *H1a*, so that unsuccessful firms show a lesser proportion of value added generation by creditors than non-failed businesses.

Failed firms are the most indebted (see Table II) and yet the least productive in terms of value added. This situation could lead to a tightening of credit conditions granted by the financial creditors for firms that begin to show financial difficulties (Módica-Milo *et al.*, 2012). Also, the probable increase in risks of failed businesses could lead to financial constraints, making access to finance in the medium- and long-term difficult; and impose a higher cost of debt or interest rate (see results DACR ratio) (Calvo-Flores *et al.*, 2006; Hellmann and Stiglitz, 2000; Maroto and Melle, 2001), which could lead to a suspension of investment projects and result in a slowdown of economic activity.

This is evidenced in previous studies on business failure, such as García Pérez de Lema *et al.* (1995), Lizarraga (1997) and Rodríguez (2001).

The explanatory variable of customers' behavior in generating value added: "generation of value added by customers" (GCLI) also shows significant differences (behavior) between the failed and non-failed businesses, the latter generating higher value added. Thus, despite the fact that the loss of market share can be due to a number of reasons, these data show that reducing the amount of sales compared to the

value added leads to a worsening of the situation of a failed business. However, circumstances such as the case of essential goods or making investments that improve the goods or services offered by firms to their customers, can also act as factors that favor the survival of a firm in these situations.

In any case, the management of customer relations is emerging as a fundamental tool (Greenberg, 2004) to encourage behavior toward activities that generate business value and help achieve competitive advantage based on these relationships (Valenzuela and Torres, 2008). Thus, the creation of a corporate culture focussed on "customer loyalty" (Greenberg, 2003) and the development of long-term loyalty actions (Karakostas *et al.*, 2005; Payne and Frow, 2005) result from establishing lasting business transactions and help to prevent potential business failure. In brief, and as expressed by Valenzuela and Torres (2008, p. 65), "Globalization and the highly competitive environment require firms to be market oriented and manage their customer base as a key strategic asset."

Finally, the explanatory variable of suppliers' behavior in generating value added: "generation of value added by suppliers" (GPRO) shows compliance with *H1a*, due to the existence of significant different behavior between the failed and non-failed businesses. As such, these results show the contribution of this group of stakeholders to worsening financial conditions of failed businesses as a result of increased spending on supplies (see Table II).

This behavior can be explained by the increase in suppliers' prices for goods and/or services to a failed business as a result of the distrust that follows a possible default situation. The rise in prices for the supply chain of goods and/or services provided will have a negative impact on production costs (Sarache *et al.*, 2009). In the long term, providers can also act by limiting the timing and volumes of loans, a situation that could further increase the firm's liquidity problems (San-José and Cowton, 2009).

In brief, the supply chain of goods can generate competitive advantages as a result of its influence on the production cost savings and the firm's increased financial capacity. This significantly and positively influences the chances of survival in a situation of widespread financial and economic crisis.

Regarding the participation of different stakeholders in the "value-added distribution" variable, the results show the following behaviors.

As for the explanatory variable of shareholders' behavior regarding the distribution of value added: "value-added distribution to shareholders" (DACC), this corroborates *H1b*, given the existence of significant differences between the two types of firms. In this sense, Pérez-Carballo (2001) points out that the ultimate financial goal of the firm is based on the distribution of value added to its shareholders, although they should previously meet with the requirements or demands of other interest groups or stakeholders.

This situation is obvious when one considers that failed firms are less profitable and even, on occasion, present negative results, meaning that no value can be returned to shareholders. This generates disinterest in improving the situation of the firm, since income from any efforts will be used to repay the remaining stakeholders.

The explanatory variable of worker behavior in the distribution of value added: "value-added distribution to workers" (DTRAN) also verifies compliance with *H1b*, showing a greater ratio of value in failed businesses with respect to non-failed businesses. This result could be explained by increased remuneration in failed businesses due to severance deliveries if the firm has chosen to conduct a workforce restructuring process as a way to reduce production costs. This fact has already been

made clear in previous studies on business failure, such as those by García Pérez de Lema *et al.* (1995) and Rodríguez (2001).

The behavior of this variable reinforces the evidence by the GTRAN variable, confirming that, in financial terms, the charge is more expensive for poor management firms, which together with lower productivity rates will lead them down the path to failure.

The variable that explains the behavior of creditors regarding the distribution of value added: "value-added distribution to creditors" (ADDR) shows a greater involvement in the case of failed firms, especially in the two years preceding the business failure situation. Thus, fulfilling the claims proposed in *H1b*. This situation may result from the higher cost of money lent to failed firms, due to: first, emergence of a potential default situation; and second, a financial mismanagement of payments, triggering very high-financial expenses.

In addition, insolvency problems make it difficult for firms to access new external sources of financing, supporting greater financial cost (Moreno, 1985), short repayment periods and high-collateral requirements (Bloch and Granato, 2007). This situation is shown to be positively related to the probability of business failure, since it will barely be able to obtain sufficient liquidity to meet compliance with payment obligations (Altman, 1984). This circumstance can influence the behavior of other stakeholders in a negative sense, because they will perceive that most of the value generated is intended to compensate the creditors.

The explanatory variable of state behavior in the distribution of value added: "value-added distribution to the State" (DEST) reports a larger logical contribution of non-failed firms, since there is a positive relationship between profitability and the payment of taxes.

However, it should be clarified that the state can significantly influence business decisions and actions, so that, sometimes, business regulation can be a constraint to growth performance (Ambler *et al.*, 2004) as a result of excessive regulation (Baron, 2002). This, in turn, affects the amount of added value generated and, therefore, its distribution.

Finally, the "value-added distribution firm" (DEMPAUT), also presents the expected relationship. Since there are limited financial resources, the failed firms give a greater part of the value added to other stakeholders. In contrast, failed firms have greater maneuverability to allocate part of the value added to self-financing.

Consequently, the early detection of previously described behaviors may be of help in the anticipation and prevention of business failure.

The representative ratios of the stakeholders' behavior regarding the generation and distribution of value added: their ability to forecast future business failure

With respect to the second analysis (multivariate analysis through binomial logit prediction models), we obtained four models, one for each year of the study sample. These are composed of significant and independent variables for each situation (Table IV).

The results of these models present the following circumstances:

- In 2009 (one year before failure), a model is observed which consists of four independent variables: "generation of value added by workers" (GTRAN), "generating value added by customers" (GCLI), "generating value added by financial creditors (GACR) and "value added distribution to shareholders" (DACC). They all contribute negatively and significantly to anticipate a possible

Independent variables[a]		Dependent variable: non-failed business (0) failed business (1) 2009	2008	2007	2006
		Coefficients (Wald χ^2 statistic)			
GTRAN	−	−0.288 (40.779)***	0.003 (16.348)***	0.005 (29.068)***	0.003 (19.503)***
GPRV	−			−0.004 (2.089)*	
GCLI	−	−0.156 (3.418)*			
GACR	−	−0.001 (10.699)***	−0.001 (6.061)**		
DACC	−	−0.968 (5.199)**	−1.622 (15.217)***	−1.129 (8.114)***	−1.781 (13.328)***
DACR	+				0.826 (6.572)*
DEST	−			−0.426 (6.004)*	
Intercept		−0.070 (0.667)	0.731 (44.121)***	0.196 (3.617)*	0.197 (8.720)***
χ^2 (sig.)		334.190 (0.000)	168.998 (0.000)	133.959 (0.000)	184.052 (0.000)
−2 log verisimilitude		1,612.025	1,989.113	2,474.590	2,355.890
R^2 of Cox and Snell		0.212	0.103	0.069	0.095
R^2 of Nagelkerke		0.282	0.137	0.092	0.127
Total percentage of success		70.6	63.4	61.3	62.9
Type I error[b] (%)		22.4	55	61.1	46.5
Type II error[c] (%)		37	19.4	18.1	28.3

Notes: [a]Variables are described in Table I; [b]type I error: classification as a non-failed firm when it is a failed firm; [c]type II error: classification as failed firm when it is a non-failed firm. *, **, ***Correlation is significant at 0.001, 0.05 and 0.01, respectively (bilateral)

Source: Authors' own

Table IV.
Binary logistic regression

business failure situation, responding to the expectations that have been raised previously. Thus, greater labor structure with lower levels of productivity, market share losses that result in lower sales contribution to the generation of value added, lower debt contribution to the generation of value added, and low participation of shareholders in the distribution of value added increase the likelihood of business failure. These results highlight the need to consider the contributions of employees, customers and creditors in bringing about the generation of value added, in order to prevent a future situation of business failure. It is also important to consider the aspirations of shareholders, given that their participation in the distribution of value added also helps to reduce the probability of failure: hence, the purpose of generating income for shareholders remains a significant aspect in ultimately achieving the survival of the business. This highlights the importance of stakeholders' role in the business.

- In 2008 (two years before failure), a similar model to the previous one was established, differing only in the exclusion of variable GCLI. However, in this case, the contribution of workers to the generation of value added manifests positively in relation to the probability of business failure, which is a result of an increase in value added due to sales. This situation is also found for the years

2007 and 2006. In this sense, reducing labor productivity is not apparent until one year before the business failure.

- In 2007 (three years before failure), the model is comprised of the following variables: GTRAN, GPRV, DACC and DEST.
- In 2006 (four years before failure), the model consists of the following independent variables: GTRAN, DACC and DACR. Specifically, DACR and GTRAN maintain a positive and significant relationship with the probability of failure. However, the DACC variable shows a significant negative relationship with the same dependent variable.

In brief, the proposed hypotheses are confirmed in different ways depending on the proximity to the point of business failure, so that indicators of generation and distribution of value added as a representative element of the relationship between the business and stakeholders form different models for one, two, three and four years prior to failure.

Conclusions

This paper empirically analyzes the behavior of stakeholders and their impact on failed businesses, through the use of a series of indicators relative to their participation in the generation and distribution of value added. It also shows the possibility of using financial indicators taken from the information contained in the Value-Added Statement as predictors in order to anticipate future business failure situations, demonstrating their importance for the future development of the literature on predictive models to anticipate this phenomenon.

To do this, we took a sample of 3,014 Spanish SMEs, of which half was immersed in a process of bankruptcy, termination or dissolution in 2010, adopting a legal definition of business failure, which limits the results to this context. With the selected sample, we identified a number of explanatory variables corresponding to ratios developed, based on economic-financial information extracted from the Value-Added Statement. A univariate comparison of means between the sample of failed and non-failed businesses was applied to this data to test the significant differences between the two, and logistic regression models were applied to test the predictive power of the variables defined and the representative nature of the behavior of stakeholders.

The results reveal that stakeholders, including shareholders, employees, creditors, customers and suppliers, can contribute significantly to reduce the likelihood of business failure, based on their participation in the generation and distribution of value added. In this sense, the ability of shareholders to recover their investments, the willingness of workers to increase their productivity, customer loyalty or the trust of the providers in a firm are key factors in helping to avoid business failure, given that they affects the firm's ability to generate value. At the same time, it is clear that the firm's ability to meet stakeholders' demands will be conditioned by their financial situation, so that the failed firms devote all their efforts to giving a part of the value added to workers and creditors, while non-failed firms are able to compensate all their stakeholders. In the case of the latter, it is hoped that stakeholders identify more with the business objectives and contribute through their behavior and decisions to reducing the risk of business failure.

Regarding the logistic regression analysis, the results show the key factors for detecting a possible business failure situation. Thus, it appears that, the information regarding the generation and distribution of value added to stakeholders could be important to prevent a future situation of business failure.

It will, therefore, be important for the survival of the business to control the level of dependency it has on the stakeholders, especially in times of economic and financial crisis, as there is a high probability that the risk of insolvency depends on their behavior. In addition, and to this end, providing financial information of the business should be encouraged in order to explain its level of dependence on stakeholders and to assess their risk of insolvency.

These results suggest the need to articulate business management models based on the stakeholder approach, which aim to align the adequate participation of all those involved in the generation and distribution of value added.

Within this consideration, it is would be desirable to include variables that reflect these behaviors and relationships in models of a business failure analysis, opening up new lines of research in this field and contributing to the debate on the influence of the behavior of different stakeholders on the increased risk of insolvency, for example, in relation to: first, how could a series of measures, representative of the qualitative behavior of stakeholders, be created to complete the financial information issued in their financial statements (i.e. qualitative characteristics of business ownership or shareholders, financial creditors, employees, or relationships with customers and suppliers)?; second, who are the most influential stakeholders in terms of the probability of business failure; and third, how should the interests of these be prioritized to ensure the survival of the firm in the future?

These and other questions provide a framework for researchers and business managers to identify relevant and valid information to increase the usefulness of the financial information contained in traditional financial statements, in order to judge business risk.

References

Altman, E. (1984), "The success of business failure prediction models. An international survey", *Journal of Banking and Finance*, Vol. 8 No. 2, pp. 171-198.

Ambler, T., Chittenden, F. and Obodovski, M. (2004), "Are regulators raising their game? UK regulatory impact assessments in 2002/2003", paper presented at British Chambers of Commerce, March, available at: www.chamberonline.co.uk/policy/issues/red_tape/redtape2004.pdf (accessed April 16, 2012).

Archel, P., Lizarraga, F. and Sánchez, S. (2009), *Estados contables: elaboración, análisis e interpretación*, Ediciones Pirámide, Madrid.

Banegas, R., Sánchez-Mayoral, F. and Nevado, D. (1998), *Análisis por ratios de los estados financieros (análisis externo)*, Editorial Civitas, Madrid.

Bannister, J.W. and Belkaoui, A. (1991), "Value added and corporate control in the USA", *Journal of International Financial Management and Accounting*, Vol. 3 No. 3, pp. 241-257.

Baron, R. (2002), "The red tape menace", available at: www.iod.com/intershoproot/eCS/Store/en/images/IOD_Images/pdf/2002redtapereport.pdf (accessed April 20, 2012).

Belkaoui, A. (1984), *Socio-Economic Accounting*, Quorum Books, Westport, CT.

Bloch, R. and Granato, L. (2007), "Las Pymes y el acceso al crédito. Observatorio Iberoamericano del Desarrollo Local y la Economía Social", *OIDLES*, Vol. 1 No. 2, pp. 454-461.

Calvo-Flores, A., García Pérez de Lema, D. and Madrid, A. (2006), "Tamaño, antigüedad y fracaso empresarial", working paper, Universidad Politécnica de Cartagena, Murcia.

Carrillo, C. and Niño, J. (2006), "Información contenida en el EVA: interpretación y evidencia empírica en Chile", *Academia, Revista Latinoamericana de Administración*, Vol. 1 No. 36, pp. 1-23.

Crouhy, M.G., Galai, D. and Mark, R. (2006), *The Essentials of Risk Management*, McGraw-Hill, New York, NY.

Deyá, B. (2004), "Efectos de la inducción de medidas financieras en los sistemas de compensación del equipo directivo: los stock option plans y el economic value added", tesis doctoral, Universidad Carlos III, Madrid.

European Commission (2003), "Commission Recommendation of 6 May 2003 concerning the definition of micro, small and medium size enterprises (Recommendation 2003/361/EC)", *Official Journal of the European Union*, Vol. 124, pp. 36-41.

Freeman, R.E. (1984), *Strategic Management: A Stakeholder Approach*, Pitman Press, Boston, MA.

Freeman, R.E. and Gilbert, D.R. (1988), *Corporate Strategy and the Search for Ethics*, Prentice Hall, Englewood Cliffs, NJ.

Freeman, R.E., Harrison, J.S., Wicks, A., Parmar, B.L. and Colle, S. (2010), *Stakeholders Theory. The State of the Art*, Cambridge University Press, Cambridge, MA.

Gallizo, J.L. (2000), "El estado de valor añadido", available at: www.5campus.com/leccion/cf009. 01/09/2011 (accessed April 25, 2012).

García Pérez de Lema, D., Arqués, A. and Calvo-Flores, A. (1995), "Un modelo discriminante para evaluar el riesgo bancario en los créditos a empresas", *Revista Española de Financiación y Contabilidad*, No. 1, pp. 175-200.

Granda, G. and Trujillo, R. (2011), "La gestión de los grupos de interés (stakeholders) en la estrategia de las organizaciones", *Economía Industrial*, Vol. 1 No. 381, pp. 71-76.

Greenberg, P. (2003), *Las claves de CRM. Gestión de relaciones con los clientes*, McGraw-Hill, Madrid.

Greenberg, P. (2004), *CRM at the Speed of Light*, 3rd ed., Osborne-McGraw-Hill, CA.

Hellmann, T. and Stiglitz, J. (2000), "Credit and equity rationing in market with adverse selection", *European Economic Review*, Vol. 44, No. 2, pp. 281-304.

Jones, F.L. (1987), "Current techniques in bankruptcy prediction", *Journal of Accounting Literature*, Vol. 6, pp. 131-164.

Jones, T.M. (1995), "Instrumental stakeholder theory: a synthesis of ethics and economics", *Academy of Management Review*, Vol. 20 No. 2, pp. 404-437.

Kane, G., Velury, U. and Ruf, B. (2005), "Employee relations and the occurrence of corporate financial distress", *Journal of Business Finance and Accounting*, Vol. 32 Nos 5-6, pp. 1083-1105.

Karakostas, B., Kardaras, D. and Papathanassiou, E. (2005), "The stale of CRM adoption by the financial services in the UK: an empirical investigation", *Information and Management*, Vol. 42, No. 6, pp. 853-863.

Keasey, K. and Watson, R. (1991), "Financial distress prediction models: a review of their usefulness", *British Journal of Management*, Vol. 2 No. 2, pp. 89-102.

Laborda, E. (2005), "La nueva realidad concursal. Elementos de solución en la crisis empresarial: el convenio y la liquidación. Viabilidad empresarial", *Boletín de la Facultad de Derecho*, No. 27, pp. 383-414.

Ley 22/2003, Concursal, 9 de julis (Spanish Insoluncy Act 22-2003, of 9 July), BOE (Officil State, Bulletin) No. 164 of 10 July.

Lizarraga, F. (1997), "Utilidad de la información contable en el proceso de fracaso: análisis del sector industrial de la mediana empresa", *Revista Española de Financiación y Contabilidad*, Vol. 26 No. 93, pp. 871-915.

López, J., Gandía, J.L. and Molina, R. (1998), "La suspensión de pagos en las Pymes: una aproximación empírica", *Revista Española de Financiación y Contabilidad*, Vol. 27 No. 94, pp. 71-97.

Lorca, P. (2003), "La creación de valor en la empresa y los stakeholders", *Harvard Deusto Finanzas y Contabilidad*, Vol. 51, pp. 48-55.

McDonald, K.R. (1993), "Why privatization is not enough", *Harvard Business Review*, Vol. 71 No. 3, pp. 49-59.

Maroto, J.A. and Melle, M. (2001), "Sistemas financieros y economía real", *Ekonomiaz: Revista Vasca de Economía*, No. 48, pp. 262-293.

Módica-Milo, A., Baixauli, J.S. and Álvarez, S. (2012), "Propuesta de un indicador de salud financiera y su efecto en la predicción del fracaso empresarial", *Revista Internacional Administración y Finanzas*, Vol. 5 No. 3, pp. 19-40.

Mora, A. (1994), "Los modelos de predicción del fracaso empresarial: una aplicación empírica del logit", *Revista Española de Financiación y Contabilidad*, Vol. 24 No. 78, pp. 203-233.

Moreno, Mª D. (1985), "Costes de dificultades financieras y política de endeudamien to empresarial", *Revista de Economía y Empresa*, Vol. 5 Nos 12-13, pp. 253-272.

Pajunen, K. (2006), "Stakeholder influences in organizational survival", *Journal of Management Studies*, Vol. 43 No. 6, pp. 1261-1288.

Pava, M.L. and Krausz, J. (1997), "Criteria for evaluating the legitimacy of corporate social responsibility", *Journal of Business Ethics*, Vol. 16 No. 3, pp. 337-347.

Payne, A. and Frow, P. (2005), "A strategic framework for customer relationship management", *Journal of Marketing*, Vol. 69 No. 4, pp. 167-176.

Pérez-Carballo, A., Pérez Carballo, J. and Vela, E. (1989), *Principios de gestión financiera de la empresa*, Alianza Editorial, Madrid.

Pérez-Carballo, J.F. (2001), *Del valor de la empresa a la creación de valor: estrategias para empresarios y financieros*, Biblioteca Civitas, Economía y Empresa, Madrid.

Platt, H.D. and Platt, M.B. (2002), "Predicting corporate financial distress: reflections on choice-based sample bias", *Journal of Economics and Finance*, Vol. 26 No. 2, pp. 184-199.

Priego, A.M. (2012), "Stakeholders y fracaso empresarial: evidencias de su interconexión a través de la información contable", tesis doctoral, UCLM, Cuenca.

Priego, A.M., Banegas, B. and Manzaneque, M. (2012), "Stakeholders y riesgo empresarial desde la perspectiva de la información contable", *Strategy and Management Review*, Vol. 3 No. 1, pp. 33-57.

Rappaport, A. (1998), *La creación de valor para el accionista: una guía para inversores y directivos*, Deusto, Bilbao.

Rodríguez, J.M. (2001), "Predicción del fracaso empresarial en compañías no financieras. Consideraciones técnicas de análisis multivariante de corte paramétrico", *Actualidad Financiera*, Vol. 6 No. 6, pp. 27-42.

San-José, L. and Cowton, C.J. (2009), "El crédito comercial y la crisis crediticia: un análisis descriptivo en Europa, Reino Unido y España", in Cossío-Silva, F.J. (Ed.), *Administrando en entornos inciertos = managing in uncertain environment*, Escuela Superior de Gestión Comercial y Marketing, Sevilla, pp. 23-55.

Sarache, W.A., Castrillón, O.D. and Ortiz, L.F. (2009), "Selección de proveedores: una aproximación al estado del arte", *Cuadernos de Administración*, Vol. 2 No. 38, pp. 145-167.

Stewart, G.B. (1994), "EVA™: fact or fantasy", *Journal of Applied Corporate Finance*, Vol. 7 No. 2, pp. 71-84.

Valenzuela, L. and Torres, E. (2008), "Gestión empresarial orientada al valor del cliente como fuente de ventaja competitiva. Propuesta de un modelo explicativo", *Estudios Gerenciales*, Vol. 24 No. 109, pp. 65-86.

Further reading

Estrada, A., Pons, A. and Vallés, J. (2006), "La productividad de la economía española. Una perspectiva internacional", *Información Comercial Española, ICE: Revista Económica*, No. 829, pp. 7-25.

About the authors

Dr Alba Maria Priego is a Lecturer at the Department of Business of Administration in the Faculty of Social Sciences at the Universidad de Castilla-La Mancha in Spain. Her undergraduate courses focus on cost and financial accounting. She received her PhD in Financial Economics and Accounting in 2012 from the Universidad de Castilla-La Mancha. Her main research interests are related to financial analysis of business failure. Her publications have appeared in journals such as *Management Business Review* and *Seminario de Ciencias Sociales* published by the Universidad de Castilla-La Mancha.

Dr Montserrat Manzaneque Lizano is a Contracted Lecturer of Accounting in the Faculty of Social Sciences at the Universidad de Castilla-La Mancha (UCLM). She completed her Degree in Business in 2000 and got her PhD in Business Administration in 2006, both at the Universidad de Castilla-La Mancha. Her thesis dealt with logistic models to predict business failure in different phases of difficulty. She has published in national and international journals such as *Innovar*, *African Journal of Business Management*, *Revista Europea de Dirección y Economía de la Empresa,* and *Strategy & Management Business Review.*

Dr Elena Merino Madrid is an Associate Professor of Accounting in the Faculty of Law and Social Sciences at the Universidad de Castilla-La Mancha (UCLM). She completed her Degree in Business in 1998 and got her PhD in Business Administration in 2007, both at the Universidad de Castilla-La Mancha. Her thesis dealt with stock options from the standpoint of financial, economic and accounting and she received the award for the best thesis on accounting. Her work has been published in national and international journals such as *Innovar*, *Contaduría y Administración, Revista de Contabilidad y Tributación* and the *African Journal of Business Management*.