THE SURVIVAL OF NEW FIRMS: IMPACT OF IDIOSYNCRATIC AND ENVIRONMENTAL FACTORS*

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1. INTRODUCTION

The evidence that new firms fail at an outstanding rate has led many researchers to investigate the factors that affect their performance and survival. In this context, industrial organization literature has recently switched its focus from questions related to entry towards post entry performance.

This literature aims at explaining why some firms survive and grow healthy while others stagnate and die. Some researchers mainly focus on the effect of environmental factors upon firm performance and survival. Environmental factors mostly relate to macroeconomic conditions or to industry characteristics such as the stage of development of the market or the degree of industry competition. Some others emphasize the impact of firms’ strategic decisions in order to strengthen their position in the market and guarantee their survival. These decisions concern for example firm size, investment in R&D or in human capital.

The hypothesis that conditions prevailing at birth affect firms’ survival, at least early in their lives, is consensual in the literature. Nevertheless, the relative importance of initial and current conditions has been motivating an interesting debate among researchers. Some advocate that initial characteristics are definitely “imprint” and condition firms’ decisions and performance during their lives. Some of the others base their research on a life cycle model for firms in order to analyse their performance and survival. They do not ignore the importance of founding conditions but emphasise the effect of the changes occurring during firms’ lives on their probability of success. The persistence of the effect of initial conditions upon firms’ post-entry performance and survival has been debated in the literature. As a matter of fact, the empirical evidence has not been consensual. Some results suggest that this effect is persistent and can even amplify while others, such as presented in a paper by Bamford et al. (1999), show that it fades away after a few years (despite being still significant six years after birth. Mata et al. (2003), using data on a large set of Portuguese firms, found that the effect of initial conditions on firms’ survival persists without much attenuation for at least several years after their birth.

Firms’ performance and survival has also been motivating finance literature which provides new insights on the factors that explain why some firms exit from the market and others don’t. The hypothesis that due to information asymmetries firms’ real and financial decisions are not independent led to an important branch of literature where the paper by S. Fazzari et al. (1988) has had a seminal role. The results of this literature are very relevant to improve the understanding of firms’ entry and survival. In particular, according to these models firms’ access to financial markets, which depends on their size, transparency or even liquidity helps to explain their performance. Furthermore, the fact that banks are...

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* The views expressed in this article are those of the author and do not necessarily reflect those of Banco de Portugal. Any errors and omissions remain of the author.

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(2) Cooper et al. (1994), for example, developed a model that predicts the performance of new firms based on measures of human and financial capital at birth.
the dominant source of financing, especially for the younger and smaller firms, suggests that relationship lending may play an important role in explaining firms’ survival. This argument is certainly more relevant in economies, like the Portuguese one, where the market for venture capital is still very incipient.

Empirical analysis on these issues lagged behind theoretical analysis both because of the difficulties in formulating empirically testable hypothesis and the lack of adequate data to test them. As a matter of fact, longitudinal data on a set of relevant characteristics for a large sample of firms is needed. These characteristics should preferably be observed since the very beginning of firms’ lives. The stage of development of the empirical analysis is also dependent on the development of the methodologies to study these phenomena and the software to deal with these data.

The study presented in this article was made possible by the availability of a unique data set that combines information on birth and death dates for a longitudinal sample of firms with balance sheet data and data on the structure of relationships between firms and the banks that provide them financing.

The objective of this study is to empirically test some of the implications of theoretical hypotheses from both of the industrial organisation and the finance literature concerning the factors that explain differences in the probability of survival across firms. In particular, this study aims at providing an answer to the following questions:

- What is the relative importance of environmental conditions (macroeconomic and industry conditions) versus firms’ specific characteristics?
- Are current environmental and specific conditions relevant?
- Are initial conditions and decisions taken at founding relevant?
- Does the effect of initial conditions and decisions affect the probability of survival at birth or does it have a continuing (or even permanent) impact on performance and survival?

In sum, the purpose of this study is to improve the understanding of the factors affecting firms’ performance and ultimately their survival. This understanding is crucial to the assessment of financial stability since anything which potentially worsens the performance of firms increases the risks that their creditors, namely the banks, make losses.

Anticipating the main results one can state that they suggest, as expected, that smaller, less transparent, more leveraged firms and those with more bank lending relationships have a larger probability of survival. Less intuitive results were obtained on the relationship between the economic cycle and the pattern of firm survival. According to these results, the probability of survival is larger in periods of higher GDP growth. Finally the results also suggest that that initial size, leverage ratio and number of bank lending relationships affect significantly and continually their chances of survival.

The remainder of the article is organised as follows. Section 2 below elaborates on the hypotheses to be tested. Section 3 presents the methodology and the data is described in section 4. Section 5 analyses the results and section 6 concludes.
2. HYPOTHESES

Most research on firms’ of survival asserts that, other things equal, larger firms are less likely to fail. Industrial organization literature argues that larger firms operate in a scale that is closer to the efficient scale in a given market and are more diversified. From the perspective of the finance literature, larger firms are relatively less affected by information asymmetries and therefore pay a lower risk premium to obtain external financing. Superior efficiency and greater diversification in the product market combined with an easier access to financing justify the argument that, other things equal, larger firms are more able to resist to adverse shocks. C. Lennox (1999), for example, using a sample of UK quoted firms, shows empirically that size affects significantly firms’ likelihood of failure.

Firm size at founding may be an indicator of entrepreneurs’ expectations concerning firm’s success. In firms that are born larger, entrepreneurs tend to be more confident upon their ability to compete. This argument is used to justify the hypothesis that initial and current values of size are expected to have differentiated effects upon survival. In addition, for very young firms, size is expected to be particularly relevant because it can mitigate the information problems due to lack of reputation.

Balance sheet composition, namely the proportion of tangibles/intangibles in firm’s total assets also relates to information issues. In general, the higher is the proportion of intangibles, such as patents or non-observable technology, more opaque is the firm and therefore more subject to information asymmetries. On the contrary, firms with relatively more tangibles that can be used as collateral are, in principle, more able to obtain external financing at better terms. Therefore, the hypothesis to test is that, other things equal, firms with a larger (smaller) proportion of tangibles (intangibles) have a larger probability of survival. It can also be argued that, soon after birth, when information problems are more acute, this effect is expected to be stronger.

The relative amount of liquid assets that a firm holds can affect how quickly and efficiently it responds in the case of a shock. Thus, more liquid firms are expectedly less likely to fail.

Firms’ probability of survival is also expected to depend on their financing structure, namely on the relative proportion between capital and debt. In theory, a higher proportion of capital relative to debt can be interpreted as a buffer that can make the access to external financing easier in the case of an adverse shock. On the other hand, highly leveraged firms may be close to the point where liquidity constraints become active. It is also sensible to assume that the frictions derived from a high leverage ratio are more acute for firms early on in their lives when they usually can place relatively less collateral.

In the same sense, a high proportion of short term debt is more likely to induce a larger probability of failure, in particular in the early years of firms’ lives.

The role played by the number of firms’ bank lending relationships is also expected to affect their chances of survival. According to the relationship lending literature in an exclusive relationship the bank gets privileged information on the firm’s prospects so that it can lend to the firm at more favourable conditions in terms of price and guarantees. Therefore the hypothesis that a unique relationship has a positive impact on the probability of survival is investigated. This effect is expected to be particularly important during the first years of firms’ lives because the benefits they can obtain outweigh the costs associated to the monopolistic power that the exclusive bank can exercise after some time.

Finally, this study also investigates the role played by the environmental conditions, both macroeconomic and industry conditions (such as market concentration or innovative capabilities) on firms’ per-

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(3) See, for example, D. Audrecht e T. Mahmood (1994).

formance and chances of survival. Specificities of the region where the firm is located are also expected to influence their likelihood of success. The potential impact of industry related factors on firms’ probability of survival is largely documented in the literature, but the results are not always consistent\(^5\).

The effect of the macroeconomic cycle upon firms’ probability of survival is more difficult to assess empirically mainly due to the shortness of the time dimension of the available longitudinal datasets (usually less than one cycle). According to the standard approach, during recessions, the contraction of aggregate demand broadly affects all firms’ sales and profits and can lead some of them to failure. However, in the empirical literature, some results suggest that this effect is less important than the aggregate approach predicts\(^6\). A more recent approach that emphasises firm heterogeneity and adjustment costs (e.g. sunk costs) asserts that recessions induce a restructuring process (characterised by labour lay-off and productivity increases). It is also plausible that under recessions the competitive pressure exerted upon established units by new comers is alleviated.

Macroeconomic conditions prevailing at the time of founding can be even more relevant to explain firms’ post entry performance and survival than current conditions. Empirical evidence suggests that booms are characterised by high firm creation but most of these firms are likely to fail when the trend upturns. On the contrary, during recessions the risks of entry are larger, demanding more discipline and inducing firms with a lower probability of success to remain out of the market.

The same kind of arguments can also be given to justify the hypothesis that the industries or regions where entry is easier the probability of exit is also expected to be larger.

3. METHODOLOGY

The main objective of this study is to analyse the impact of environmental and firm specific conditions upon their probability of survival. The methodology that is adequate to cope with this kind of problem is known in the literature as duration analysis. In duration analysis the variable to explain is the time evolved before a certain event occurs which is, in this case, firm failure. Duration analysis enables us to characterize the process of firm failure more rigorously than with a binary dependent variable approach, that is, through the estimation of logit or probit regression models. These models can only deal with the dichotomy occurrence/non occurrence of the event. Furthermore, duration analysis is more adequate to accommodate data censoring. As a matter of fact, survival times are frequently right censored, that is, at the period of observation the relevant event has not yet occurred. Duration models are able to handle incomplete durations.

An important concept in duration analysis is the hazard rate, \(\lambda(t)\), defined as the rate at which spells are completed after duration \(t\), given that they lasted at least until time \(t\). In some duration models the inclusion of explanatory variables is very straightforward and the interpretation of the coefficients, though in general less so, in the case of a few distributions also gets a regression like interpretation. We can also estimate the relationship between the hazard rate and explanatory variables without having to make specific assumptions about the underlying distribution. This approach results in models usually referred as semi-parametric\(^7\). Cox (1972) proposed semi-parametric model satisfying a separability condition, that is, the hazard rate can be given by the expression:

\(\lambda(t) = \lambda_0(t) \exp(\beta'x)\)

\(\lambda_0(t)\) is called the baseline hazard rate and \(\beta'x\) is the linear combination of the explanatory variables. The results in D. Audrecht and T. Mahmood (1994), for example, show a negative and significant effect of market concentration upon the survival of new firms. On the contrary, Mata and Portugal (1994) do not obtain a significant result for the effect of the same variable. T. Boeri e L. Bellmann (1995), for example, do not find a significant relation between the economic cycle and firms’ survival. For a rigorous exposition of duration analysis see Lancaster (1990). For more practical issues see also M. Cleves et al. (2002).
where \( h_0(t) \) is the baseline hazard, which is common to all units of observation, \( x \) is a vector of time-varying explanatory variables and \( \beta \) is the vector of parameters. Cox proposed a partial likelihood method (rather than a maximum likelihood as in parametric analysis) for estimating the slope coefficients \( \beta \).

Taking logs to both sides of equation (1) we have:

\[
\log h(t | x_i) = \log h_0(t) + \beta' x_i
\]

that is linear in \( x_i \).

Several specifications for equation (2) can be written depending on the hypothesis on how \( x \) affects the survival of new firms. Considering that:

\[
x_i = x_0 + \Delta x_i
\]

where \( x_0 \) is the vector of the explanatory variables measured at the moment of founding and \( \Delta x_i \) measures the changes in these variables from founding to the current period, the more general specification may be taken into account:

\[
\log h(t) = \log h_0(t) + \beta_0 x_0 + \beta_1 \Delta x_i
\]

by allowing the effect of founding conditions upon failure at the moment of founding differ from the effect of founding conditions upon failure at subsequent periods.

With this formulation the hypothesis that initial conditions are important to explain firms’ probability of survival can easily be tested. With the convenient reparameterisation:

\[
\log h(t) = \log h_0(t) + (\beta_2 - \beta_0) x_0 + \beta_1 x_i
\]

the significance of the estimated coefficient in \( x_0 \) gives a direct test for the equality of \( \beta_1 \) and \( \beta_2 \).

Finally, to assess if the effect of initial conditions is temporary or, on the contrary, persists along several periods the following specification was also estimated:

\[
\log h(t) = \log h_0(t) + \beta_1 \Delta x_i + (\beta_2 + \beta_3 t) x_0
\]

which results from replacing \( \beta_2 \) by a simple linear function of time.

4. DATA

The data used in this study comes mainly from three databases. The first is the balance sheet survey conducted by the Banco de Portugal on a yearly basis since 1986 on a large sample of firms. It covers mainly balance sheet data but is also informative on the firm’s start-up date, number of workers or activity sector. It is possible to follow a significant part of these firms for several years. However, firms’ participation in the survey is voluntary. Therefore exiting this sample does not mean that the firm has failed. Consequently data on firms’ exits from the market were obtained from a different source that is Quadros de Pessoal. These data are collected through a survey yearly conducted by the Ministry of Employment since 1982. This survey is compulsory to all firms employing paid labour. Therefore if a firm stops to reply it is classified as a closure. Data on firms’ lending relationships was obtained from the monthly reports on credit filed by banks operating in Portugal with the central bank. Credit reports
detail amounts outstanding vis-à-vis each debtor at the end of the month. Each claim is broken down according to original maturity (short or long term). There is also information on the amount that is past due.

Using the CB database is possible to follow, since birth, a sample of 6485 firms. From these a sub-sample of 3354 firms appears in the credit register database since start-up. Approximately 17 per cent of the firms exited the market until 1998. Note that the use of CB leads to an underestimation of exits because in this database larger and in better shape firms are over-represented.

Chart 1 depicts the distribution of firm failures according to the age of the firms at the time of failure (as a percentage of total number of failures in the sample). It is in line with a stylised fact of firm survival analysis, that is, most failures occur during the first years of firms' lives. Of the unsuccessful firms in this sample, 78 per cent of failures occur during their first 5 years.

Chart 2 relates firms' survival rates and economic activity. This chart shows the distribution of the percentage of firms that survived at least 4 years according to start-up year and the real GDP growth rate in that year. These figures suggest that firms created in boom years are more likely to exit early in their lives. At first sight, this is not an intuitive result. However, it is in accordance with the view that under the optimistic atmosphere of boom years a large number of firms are created many of which have low chances of survival. In recession years these firms would not have entered the market. In addition, note that, in the recession of 1993-1994, firms that were created during the expansion years 1989-1990 attain the precise age at which failure rates are higher.

Table 1 characterises the sample in terms of average values, measured at founding, for a set of variables potentially related to firms' chances of survival: size, asset composition, leverage and its composition, legal form, sector of activity, region and bank lending relationship measures. The sample has been broken down into the two sub-samples of successful and unsuccessful firms.

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(8) The start-up year is the first full year of activity for firms in the CB database.
(9) 1998 is the last year for which data on failures is available.
(10) In this sample approximately 90 per cent of firms survived at least 4 years. This figure is larger than that reported by J. Mata and P. Portugal (1994) (around 50 per cent) obtained with QP data for manufacturing in the period 1983-1987 (reflecting partly the weight of the recession of 1983-1984).
The average initial size of firms is 2.5 million euro, being lower in the case of firms that fail. However, size presents a high variability so that the difference between the means for the two samples is not significant according to the t-statistic of the test for the difference of means (reported in column 4). Asset composition (proportions of tangibles, intangibles and liquid assets) at founding does not differ significantly between the two sub-samples. The initial proportion of trade credit extended is significantly lower in the case of firms that fail.

The average leverage ratio (debt over assets) at start-up is approximately 82 per cent, being significantly higher for the unsuccessful firms. Most initial debt is short-term debt. The proportion of short-term debt is significantly higher in the case of successful firms. On the contrary the proportion of long-term debt is significantly larger for those that fail. Profitability at start-up is significantly lower for the unsuccessful firms.

Most firms in this sample are manufacturing firms. This sector is more represented in the case of firms that fail. Only 7.5 per cent of all firms in the sample are stock firms.
In addition, the figures in Table 1 show that, at start-up, the average number of bank-lending relationships is 1.5. In this sample, 65 per cent of firms start up with an exclusive relationship. The proportion is significantly higher in the case of successful firms.

These results provide a first clue to the relation between the probability of survival and some relevant firm characteristics but they are not conclusive. Only regression analysis can test for the effect of each variable controlling simultaneously for the effect of all other variables included in the estimated model.

5. ESTIMATION RESULTS

5.1 Effect of Idiosyncratic and Environmental Conditions

The first objective of this study is to identify the main factors that explain why longevity differs across firms. Thus, the variable of interest is the time elapsed between the firm’s start up and failure so that the appropriate methodology to address the issue is, as referred above, the estimation of a duration model.

In the first estimated model the set of explanatory variables includes the current levels of firm specific characteristics such as size (measured by the logarithm of sales), the proportion of tangibles and intangibles in total assets, liquidity (measured by cash and bank accounts plus tradable securities over total assets), trade credit extended and debt (as a percentage of total assets) and the number of bank-lending relationships. Environmental current conditions (macro and industry level) are controlled through the inclusion of the real GDP growth rate and industry dummies. The results of the estimation of this model, which corresponds to equation (2), are shown in Table 2. The models in columns 2, 3, and 4 exclude the explanatory variables for which non-significant estimated coefficients were obtained in the model of column 1 (according to the usual significance levels).

Table 2 shows the results of estimating equation 2. The interpretation of $\beta_k$ is as follows. When $\beta_k > 0$, for example, an increase in $x_k$ leads to an increase in the probability of failure. It is also useful to look at the exponentiated coefficients, $\exp(\beta_k)$, that have the interpretation of the ratio of the hazard for one unit change in $x_k$. For instance, according to the results in column (2) of Table 2 a one unit change in the logarithm of sales (corresponding approximately to multiply sales by 3) leads to an hazard rate that is equal to 82 per cent of the baseline hazard $h_0(t)$ (given that $\exp(-0.193)=0.82$). An increase of 1 percentage point in the leverage ratio corresponds to an hazard rate 1.4 per cent higher (as $\exp(0.0143)=1.0145$). The rise in the hazard rate is 1.6 and 1 per cent in the case of 1 percentage points increments in short-term and medium/long term debt, respectively (as $\exp(0.0158)=1.059$ and $\exp(0.0097)=1.097$ in the results presented in column 4). Firms with an exclusive credit relationship with a bank have a 20 per cent lower hazard rate (since $\exp(-0.223)=0.800$ in column 3).

In summary, the results from Table 2 presented so far, suggest that smaller firms, those that are less able to pledge collateral, that are more leveraged or have a large number of relationships have lower chances of survival. The evidence on the effect of GDP growth is less intuitive and must be interpreted with special caution. As a matter of fact, somehow surprisingly, firms’ probability of survival is higher when GDP growth is lower. According to the results in column 2, a increase of 1 percentage point in GDP growth rate leads to an increase of 16.7 per cent in the hazard rate. At first sight, this result is surprising, but it may be due to the effect of stronger competitive pressure during booms which could also intensify exit. In addi-

[11] The results also suggest that firms’ chances of survival depends significantly on the industry where the firm operates.
5.2 Effect of the initial conditions and decisions

One of the objectives of this study is to investigate if firms’ founding choices and conditions have persistent effects on their chances of survival. This corresponds to estimate equation (4) the results of which are presented in Table 3. In column (2) the leverage ratio is broken down between short and long-term. Column (3) shows the results of the t statistic of the test for the equality of $\beta_1$ and $\beta_2$ in equation (4) (see the reparameterization given by equation (5)).

According to these results, initial firms’ size, leverage ratio and number of bank-lending relationships have a significant impact upon their probability of survival. However, the effect of current size is more important than the effect of initial size. On the contrary, the effect of the number of bank relationships at founding is larger than the effect of the current number.

(12) This conjecture is corroborated by the results of the estimation of a model (not shown) in which the variable GDP growth is included with a 3 year lag. In this case the sign of the estimated coefficient is the opposite and significant.
In the case of the leverage ratio, the results suggest that the effects of the initial and current levels are both relevant to explain firms’ chances of survival. According to the results of the t-statistic, these effects are equally important.

The estimated results also indicate that macroeconomic conditions prevailing at the time of founding are relevant to explain firms’ survival, suggesting that firms created during periods of high GDP growth are more likely to fail. This result is consistent with the conjecture that in booms a huge number of firms are created but most of these firms have a low probability of success.

Finally, Table 4 shows the results of the estimation of equation (6), which investigates if the effect of firms’ initial leverage ratio on the probability of survival persists in time. According to the sign of the estimated coefficient associated to the multiplicative variable $x_0 * t$, the effect of the initial short-term debt
Table 4

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<tr>
<th>DURATION MODELS: ESTIMATION OF EQUATION 6</th>
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<th>1</th>
<th>2</th>
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<tbody>
<tr>
<td><strong>Size</strong></td>
<td></td>
<td></td>
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<tr>
<td>Current logarithm of sales</td>
<td>-0.191 (-4.72***)</td>
<td>-0.184 (-4.51***)</td>
<td>-0.184 (-4.46***)</td>
</tr>
<tr>
<td><strong>Assets composition</strong></td>
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<tr>
<td>Current intangibles/total assets ratio</td>
<td>0.0182 (2.03**)</td>
<td>0.0185 (2.11**)</td>
<td>0.0188 (2.15**)</td>
</tr>
<tr>
<td>Current trade credit extended/ total assets ratio</td>
<td>0.00661 (3.44***)</td>
<td>0.00538 (2.72***)</td>
<td>0.00512 (2.59***)</td>
</tr>
<tr>
<td><strong>Leverage</strong></td>
<td></td>
<td></td>
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<tr>
<td>Current debt/total assets ratio (change)</td>
<td>0.0169 (6.93***)</td>
<td></td>
<td></td>
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<tr>
<td>Initial debt/total assets ratio</td>
<td>0.0100 (3.44***)</td>
<td></td>
<td></td>
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<tr>
<td>Initial debt/total assets ratio * t</td>
<td>0.000967 (1.11)</td>
<td></td>
<td></td>
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<tr>
<td>Current short-term debt/total assets ratio</td>
<td></td>
<td>0.0156 (8.33***)</td>
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<tr>
<td>Current short-term debt/total assets ratio (change)</td>
<td>0.0161 (7.23***)</td>
<td></td>
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<tr>
<td>Initial short-term debt/total assets ratio</td>
<td>0.0202 (7.28***)</td>
<td></td>
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<tr>
<td>Initial short-term debt/total assets ratio * t</td>
<td>-0.00215 (-2.52**)</td>
<td></td>
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<tr>
<td>Current medium long-term debt/total assets ratio</td>
<td>0.00987 (4.18***)</td>
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<tr>
<td><strong>Bank-lending relationships</strong></td>
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<tr>
<td>Current number of bank-lending relationships</td>
<td>0.117 (3.16***)</td>
<td>0.108 (2.91***)</td>
<td>0.111 (3.02***)</td>
</tr>
<tr>
<td><strong>Macroeconomic conditions</strong></td>
<td></td>
<td></td>
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<tr>
<td>Current GDP growth</td>
<td>0.157 (4.69***)</td>
<td>0.171 (4.74***)</td>
<td>0.181 (4.83***)</td>
</tr>
</tbody>
</table>

|                      |                        |                        |                        |
| N. observ.          | 16917                  | 16897                  | 16897                  |
| Pseudo LL           | -4009.1015             | -3990.2171             | -3889.1377             |
| Wald test(p-value)  | 0.0000                 | 0.0000                 | 0.0000                 |

Notes: (a) t-ratios in parenthesis; the null hypothesis rejected at **1%, **5%, *10%. (b) The estimated models also include the following control variables: sector of activity dummies, corporation legal form dummy (model of column 1), and location dummy.

The ratio declines over time. However, in the case of both the total debt ratio and of the medium/long term debt ratio, the results do not show a similar declining effect.
6. CONCLUSIONS

The aim of this study is to identify the factors that explain why the probability of survival differs across firms. A longitudinal set of data on a sample of Portuguese firms observed since birth is used. This dataset combines data on firms’ start-up and failure dates, balance sheet information and data on the structure of bank lending relationships.

The hypotheses to test are based on the conclusions of some relevant industrial organisation and finance models. Thus, it was expected that size, assets composition, financing structure and number of bank-lending relationships (reflecting firms’ strategic decisions and their ability to raise external financing) would have a significant impact on firms’ chances of survival.

The results of duration analysis suggest, as expected, that the probability of survival is lower for firms that are smaller, have a lower ability to pledge collateral (and consequently to raise external financing), are more leveraged and have a larger number of bank-lending relationships.

Less intuitively, the results also suggest that firms’ chances of survival are lower in periods of higher GDP growth. These results should be interpreted with special caution given the characteristics of balance sheet survey data (covering firms that typically have a performance above the population average) and the shortness of the time dimension (that covers only one economic cycle). In addition, this result seems to be in line with the conjecture that firms effectively leave the market only several years after getting into financial distress.

This study also addresses the question of the relative importance of the impact of initial and current conditions on firms’ probability of survival. The results indicate that firms’ size, leverage ratio and number of bank relationships at start-up have a persistent and significant impact on their chances of survival. In addition, the empirical evidence suggests that firms that are created during periods of expansion are more likely to fail.

The issues investigated in this study are particularly relevant to the assessment of financial stability. The incidence of failure in the corporate non-financial sector has important macroeconomic implications on investment and economic growth. But it also affects the stability of the financial system because when firms fail, their creditors, namely banks, usually also suffer losses. So, anything that affects the probability of firms’ failure also affects the risks faced by the banking system.

The evidence that initial conditions have long lasting effects on survival has also some implications. It suggests, in particular, that the criteria for granting credit should not only be based on contemporary indicators but should also, as much as possible, go back in firms’ history.

REFERENCES


