Bankruptcy in Belgian Social Purpose Companies: An Analysis of Financial, Environmental and Institutional Factors. *

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Abstract

How and why do Belgian social purpose companies (SPCs) thrive or go bankrupt? Because they operate with both a financial and social bottom line, factors influencing SPCs survival may be meaningfully different than for their non-profit or business counterparts. Drawing on prior research on organisational predictors of bankruptcy, this paper models the degree to which financial, environmental and institutional conditions drive SPCs financial collapse. Cox survival regression analysis is applied to panel data compiled from a decade of observations yielding 2,103 unique observations of 526 SPCs, which allow us to investigate the conditions preceding SPC failure. The results indicate that potential agency problems, older age, smaller size, a hostile policy environment and a specific industry affiliation all significantly increase the probability of bankruptcy in SPCs. These findings suggest that scholars and practitioners must look beyond financial determinants to understand the drivers of bankruptcy among SPCs.

JEL-Classification: L31, L32, G32, G33

Keywords: Social enterprises, social purpose companies, bankruptcy, financial health.

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1 Introduction

Financial health is a critical determinant of the long-term success of social enterprises (SEs). A considerable number of voices can be heard from social entrepreneurs stating that it is vital to learn as much as possible from the collapse of SEs (Cahalane, 2013). Research on this issue, however, is very scant. Scott and Teasdale (2012), who analyse the failure of a social enterprise, point out that the main reason for financial collapse is poor governance. Indeed, in many cases the board did not possess the appropriate financial skills to recognise serious financial problems and to solve them in a timely manner.

Kirchner et al. (2007), who measure the financial health of non-profit arts organisations, suggest that financial health is critical to the long-term success of non-profit performing arts organisations. The same statements claiming that financial health is a critical factor in the success of non-profit organisations can be also found, inter alia, in Carroll and Stater (2009), and in Tuckman and Chang (1991).

Social entrepreneurship can be described as "innovative, social value creating activity that can occur within or across the nonprofit, business, or government sectors" (Austin et al., 2006), or simply as an entity that tries to fill in the gaps left by states and markets (Yujuico, 2008). An important but difficult challenge in the literature is conceptualising the geography of social enterprises (Young, 2012). Young and Lecy (2014) propose the metaphor of a social enterprise zoo, in which many different "animals" combine social and market goals in substantially different ways and each species has a distinct environment and needs. A distinction is made among "six major species of zoo animals", namely for-profit business corporations, social businesses, social cooperatives, commercial non-profit organisations, public-private partnerships and hybrids (see Billis (2010) and Doherty et al. (2014) for more extensive discussions of hybrid organizations).

In this paper, we study exclusively SEs with a social mission exploiting business activities to support their social activities (Borzaga and Defourny, 2001; Defourny and Nyssens, 2010; Nyssens, 2008): the Belgian social purpose companies (SPCs). We shall contribute to the literature by identifying the main indicators of failure of SPCs and exploring the conditions under which they minimise the risk of bankruptcy. We provide evidence that the financial determinants well describe the financial health of these organisations but they are not the only source of the success of SEs. We point out that, in addition to the internal issues (captured by our financial ratios), the main causes of failure might be on

regional levels, as well as, possibly being related to local and sectoral regulations, political features and the difficult interest scopes in which SPCs fulfil their social mission, within defined sectors.

To achieve our goal, we develop a model that identifies the features of successful SPCs. By conducting dynamic panel data analyses and Cox survival regressions, we reveal the conditions that precede financial failure of SEs. This yields suggestions as to how SEs should be managed in order to survive and carry out their mission.

The remainder of the paper is organised as follows. In the following section, we discuss potential features and characteristics that increase the SPCs chances for failure. Next, in Section 3, we concisely summarise the extant literature on the prediction of bankruptcy. This is followed by the presentation of the method in Section 4, the description of the data in Section 5, and the analysis of our results in Section 6. Section 7 concludes our study.

2 Why do social purpose companies fail?

In looking for significant differences between those SPCs that have failed and those still operating, we define potential causes which contribute to their financial collapse. Based on the suggestions of Helmig et al. (2014), who identify the internal and environmental determinants of the success and failures of non-profit organisations, we select variables which are relevant in the case of SPCs such as management, age and the size of the organisation, governance, competition, regulation, as well as the demand for services delivered by the non-profit organisations. Furthermore, we add financial determinants which are mostly measured in the case of bankruptcy of for-profit firms (Altman, 2000; Ohlson, 1980; Yazdanfar, 2011). We look at those financial determinants that might constitute the main failure causes with respect to the potential problems in governance and financial management.

2.1 Potential Agency Problems

As Brown (2005) points out, governance issues are present in every kind of organisation. Therefore, the natural assumption is to introduce this concept when predicting the bankruptcy of SPCs. Non-profit institutions may suffer from agency problems like for-

profit organisations. For the latter, these problems are closely related to their financial performance (Myers, 1977).

Measuring potential agency problems using as a proxy the ratio of potential agency costs (labour costs (i.e. remuneration, labour-related contributions and pensions) to total assets (Dyl et al., 2000)), we expect that the increase in this variable will result in an increase in the probability of bankruptcy.

Hypothesis 1. *High ratio of potential agency problems is positively associated with the probability of bankruptcy.*

2.2 Growth

Callen et al. (2010), who study the relation between the stability of the non-profit organisation's environment and the structure of its board of directors, find that the impact of various board features on organisational performance is contextual. They also show that board members' activities fluctuate from less effective, when the organisation is stable, to more effective in the opposite case. This suggests an incorporation of adequate controls on the governance in order to prevent potential failure. Therefore, following Callen et al. (2010) who claim that there is a positive association between organisational instability and growth, we formulate our next hypothesis as follows:.

Hypothesis 2. *Low ratio of growth is positively associated with the probability of bankruptcy.*

2.3 Profitability

Perkins and Fields (2010) and Khan (1985) investigate the impact of top managers on the performance of an organisation. This group of stakeholders is identified as the one which may have a negative impact on growth of revenues, also in the case of non-profits (Callen et al., 2010; Gras and Mendoza-Abarca, 2014; Perkins and Fields, 2010). Using financial statements allows an evaluation of the performance of a company, e.g. by profitability (Khan, 1985), measured as the ratio of EBIT to total assets. Therefore, one may expect that a lack of profitability is a critical reason for the failure of any kind of business (including SEs).

Hypothesis 3. *Lack of profitability is positively associated with the probability of bankruptcy.*

2.4 Tangibility

Titman and Wessels (1988) claim that the profitability of a firm is an important determinant of its capital structure. According to Frank and Goyal (2009), more profitable firms face lower financial distress costs and cheaper debt possibilities. For non-profit organisations, for which the cost of equity is lower than the cost of debt, it seems rational to follow a strategy that avoids debt as much as possible (Jegers and Verschueren, 2006). To achieve this, non-profit organisations strive for donations, subsidies, gifts and other cheap equity components. However, access to all of these sources is limited.

Following this line of argument, one may also expect a lack of efficiency to be a potential reason for financial collapse. Thus, a low ratio of tangibility, measured as the relation of fixed assets to total assets, seems to be an additional justification for a financial collapse; the industry specific characteristics are captured by additional dummy variables.

Hypothesis 4. *Low ratio of tangibility is positively associated with the probability of bankruptcy.*

2.5 Age

Freeman et al. (1983) give evidence for the proposition that new organisations are more likely to fail than old ones. They point out that there is a higher risk of bankruptcy among young enterprises which is related to a higher dependency on cooperation with unknown partners and a lower level of legitimacy. The same findings are demonstrated by Harrison and Laincz (2008) in the case of non-profit organisations. Therefore, it seems natural to expect that younger SEs also face a higher rate of bankruptcy than the more experienced ones.

Hypothesis 5. *Age is negatively associated with the probability of bankruptcy.*

2.6 Size

On the one hand, small organisations are more likely to fail; however, on the other hand, there are studies which did not find any relationship between size and the probability of bankruptcy. Harrison and Laincz (2008) show that in the case of non-profit organisations those that failed were rather small. Looking at business organisations, Altman (2000)

indicates that size should also be included as a possible reasons for failure. He suggests that any new model should include this determinant of financial collapse.

Hypothesis 6. *Size is negatively associated with the probability of bankruptcy.*

2.7 Competition

The hypothesis that hospitals located in a more competitive environment are more likely to be closed is the result of the analysis by Castle (2005). He employs the Herfindahl-Hirischam Index (HHI) to measure the level of competition. The higher the value of this index, the more concentrated and the less competitive the market is. The evidence by Castle (2005) suggests that, in the case of nursing homes, the facilities which were closed were located in markets with high competition levels. Therefore, it might be interesting to include a proxy for the level of competition. This paper would consider HHI of SPCs with respect to sectors within regions.

Hypothesis 7. *Competition is positively associated with the probability of bankruptcy.*

2.8 Governance Structure

Institutional arrangements might play an important role in explaining why some organisations in the same sector are more successful then others (Jordan, 2001). By examining SEs, one may expect that the legal form, under which an organisation runs its activities, at least partly reflects this effect. Therefore, we suggest the use of proxy for governance structure, indicating the SPC's legal form as a dummy variable.

Hypothesis 8. *Governance structure is associated with the probability of bankruptcy.*

2.9 Policy

Following the previously mentioned determinant which links the probability of bankruptcy with the regulations under which SPCs operate, one might also identify general policy as a significant cause of bankruptcy of SPCs/SEs. Focusing on Belgium, it can be pointed out that the programmes of local governmental support differ among the three regions. Thus there are three independent sets of regulations imposed on SPCs: in Brussels, Flanders and Wallonia. As is shown by Szymańska et al. (2015), SPCs operating in Flanders face

less support from their local authorities and have an easier access to debt. Hence, these institutions accumulate higher levels of financial debt. Keeping this in mind, we might notice that those enterprises that need to be more resourceful would also take more care their financial performance, which will decrease their probability of bankruptcy.

Hypothesis 9. *Policy is associated with the probability of bankruptcy.*

2.10 Industry Affiliation

In looking for determinants which influence on the probability of bankruptcy we should also consider the sector in which SEs/SPCs operate. As is shown by Chava and Jarrow (2004), industry effects have a significant impact on the hazard rate of bankruptcy. Moreover, the capital structure is highly dependent on industry affiliation and individual firm characteristics (Sanyal, 2011). As noted by Frank and Goyal (2009), a specific industry may require particular types of assets and technology, and have its own regulations (Frydenberg, 2011). Furthermore, some of the activities undertaken by the SEs tackle very sensitive areas which are based on the target group of beneficiaries, to whom we refer as difficult client focus. One might expect that probability of bankruptcy is higher in this case.

Hypothesis 10. *Industry affiliation is associated with the probability of bankruptcy.*

3 Prediction of bankruptcy

Bankruptcy, or financial failure, occurs when (any kind of) a business is obliged (mostly by a court decision) to cease its activities because it cannot meet its financial obligations. Many researchers have tried to predict this event since the pioneering work by Altman (1968).

Thus far, a considerable body of research has applied the traditional tools of forecasting financial distresses within for-profit organisations. Lacher et al. (1995) group these methods into three categories: 1) ratio analysis; 2) multiple discriminant analysis; and 3) Altman's Z score model, which is a special case of method 2. The traditional approach based on the Altman's Z score model (Altman, 1968) weighs financial determinants in a multiple discriminant score analysis, and takes into account five financial ratios (Working Capital/Total Assets, Retained Earning/Total Assets, EBIT/Total Assets, Market

Value of Equity/Total Assets, Sales/Total Assets). An alternative approach is the O-score model (Ohlson, 1980) which, in addition to financial determinants, also includes two dummy variables (the first takes the value of one if total liabilities exceeds total assets, the second represents a situation when net income is negative for the last two years) to construct a probabilistic model of bankruptcy using logistic regression.

The O-score model and the Z-score model are compared by Hillegeist et al. (2004) to the Black-Scholes-Merton option pricing model. They find that the Black-Scholes-Merton option pricing model can be also successfully implemented to derive a proxy for the probability of bankruptcy in the case of joint-stock companies. They suggest that this method yields more information than the Z-score and the O-score models (Ohlson, 1980). However, this approach cannot be applied in the case of SEs, since they are generally not priced on the stock market[1].

Only a limited number of studies have investigated the financial health of non-profit organisations (Bowman, 2002). Tuckman and Chang (1991) formulate a model that enables the analysis of the financial problems of non-profit organisations. Further, Trussel et al. (2002) and Trussel (2002) apply a prediction model for non-profit organisations and propose a scoring method to measure their financial health. Trussel et al. (2002) propose the Financial Vulnerability Index, which is tested by Andres-Alonso et al. (2015). However, as is found by Andres-Alonso et al. (2015), in the case of British non-governmental organisations, neither the Financial Vulnerability Index nor its components are appropriate for predicting changes in the capital structure of non-profit organisations, possibly leading to failure.

Financial health is obviously critical for the long-term survival of non-profit organisations (Kirchner et al., 2007). As the Kirchner et al. (2007) study indicates, in the case of American art non-profit organisations, contributions from government sources and marketing activities undertaken by the non-profit organisation may be also significant determinants of financial health. These results demonstrate the value and importance of including non-financial variables to explain financial performance.

[1]The Belgian bankruptcy models for for-profit organisations are discussed inter alia by Ooghe et al. (1995) and by Dewaelheyns and Van Hulle (2004).

4 Methodology

To predict the bankruptcy of SPCs we use a financial model indicating conditions contributing to the financial failure of SPCs (Chava and Jarrow, 2004; Dimitras et al., 1996). To analyse survival time, we apply a Cox regression[2] (Corrente et al., 2003; Cox, 1972) in the first stage of our analysis. Then, in the second stage, we run a logistic regression, which is one of the most common approaches in the prediction of bankruptcy, and which allows us to interpret directly the results based on the marginal effects.

We define the set of determinants in which we detect causes of failure of SPCs. We start with financial and managerial characteristics, and then gradually add variables that describe the environment in which SPCs operate. Finally, we propose a bankruptcy prediction model and the main conditions that bring Belgian SPCs closer to business collapse.

Based on the available data for Belgian SPCs, the model is fed with data with respect to factors listed below[3].

1. *Potential Agency Problems* are measured by agency cost ratio: AGEN=LabCost/TotA,
2. *Growth* is captured by changed in assets: GROW=(TotA-lagTotA)/TotA,
3. *Profitability* is measured as the ratio of EBIT to total assets: PROF=EBIT/ToTA,
4. *Tangibility* is measured as the relation of fixed assets to total assets: TANG=FixA/TotA,
5. *Age* of the SPC which changes over years,
6. *Size* is measured by the size of total assets (SIZE=ln(TotA)),
7. *Competition* was captured by the HHI index which measures the competition of SPCs within region per industry within SPCs (in the case when the SPC operates in more than 1 industry, the average value is used); however, at the end, we have decided to skip this determinant, owing to the fact that our sample contains only SPCs and we do not have such detailed information about the entire market (Belgian third sector and POs),
8. *Governance Structure* is contained as a dummy variable which takes 1 if the SPC operates under the legal form of *co-operative with limited liability with a social aim*,
9. *Policy* is assumed to be included in the regional regulation, therefore the dummy variables are applied (Flanders (Wallonia) = 1 if the SPC is register in Flanders (Wallonia)),

[2] A Cox model is a statistical technique for exploring the relationship between the survival of a patient (probability of death) and several explanatory variables; the model is used mostly in testing the survival of patients in medicine after treatment (Walters, 2009).

[3] For the full names of variables' abbreviations go to Table A.II.1 in Appendix II.

10. *Industry Affiliation* is measured by dummy variables that take the value of 1 if the SPC operates in the particular sector.

5 Data

In this paper, we study the category of SEs with a social mission exploiting business activities to support their social activities (Borzaga and Defourny, 2001; Defourny and Nyssens, 2010; Nyssens, 2008): the Belgian social purpose companies (SPCs).[4] These enterprises run their businesses under different for-profit legal forms, but with a social aim as their major objective, which is included in their legal denomination, and consistently pursue their social missions.

Our list of Belgian SPCs was obtained thanks to ConcertES asbl.[5] At the beginning of June 2014, 708 entities were registered. The financial data source was *Bel-first*, which contains the financial statements of companies registered in Belgium and Luxembourg.

The sample was constructed at the beginning of September 2014. We compiled data for the ten year period 2004-2013, taking into account only those for-profit legal forms whose names on the legal forms include the words "social aim", for example, 'private company limited by shares with a social aim', 'private company with limited liability with a social aim', and so on. Our basic sample contains 526 Belgian social purpose companies (453-running; 73-bankrupt). The percentage of those that went bankrupt amounts to 13.88%.[6] Following Ozkan (2001), all enterprises with any missing observations for any of the variables were discarded, leaving 2,561 firm-year observations for further analyses.

Table 1 contains descriptive statistics of analysed variables separately for those SPCs that failed (Bankrupt), those that operate (Normal) and for the full sample. Correlations among the current and lagged observations are presented in Table 2. On account of very high correlations between Agen and lagAgen, Tang and lagTag, and Size and lagSize, only current values of these variables are used in the further analysis.

[4]in French: Sociétés à finalité sociale (SFS); in Dutch: Vennootschap met een sociaal oogmerk (VSO). With respect to Belgian law, the legal form of the SPC is available for enterprises that run their business under any available legal forms, focus their activities on their social aims and meet a set of formal criteria. For details see: http://www.mi-is.be/be-fr/economie-sociale/statuts-0

[5]ConcertES asbl was developed as an Observatory of Social Economy in Belgium; for details see: www.concertes.be

[6]The information with respect to industry, region and legal form is provided in Table A.I.1 in Appendix I.

Table 1: Descriptive Statistics

Category	**Agen**	**Grow**	**Prof**	**Tang**	**Age**	**Size**
Normal						
Average	0.99	-0.06	-0.12	0.41	13.12	6.14
Median	0.37	0.05	0.02	0.30	5.00	5.88
Min	-0.04	-229.13	-319.94	0.00	0.00	-4.14
Max	13.15	0.99	3.71	1.00	118.00	12.64
St.Dev.	1.46	4.62	5.88	0.35	22.25	2.29
Bankrupt						
Average	2.24	-0.38	-0.19	0.24	19.49	4.80
Median	1.83	0.07	-0.01	0.18	10.00	4.79
Min	0.00	-34.76	-8.94	0.00	1.00	-1.49
Max	18.15	0.99	6.31	1.00	94.00	9.22
St.Dev.	2.42	3.13	0.97	0.23	22.51	1.55
Full sample						
Average	1.08	-0.08	-0.12	0.39	14.00	6.05
Median	0.44	0.05	0.02	0.28	6.00	5.79
Min	-0.04	-229.13	-319.94	0.00	0.00	-4.14
Max	18.15	0.99	6.31	1.00	118.00	12.64
St.Dev.	1.58	4.55	5.67	0.34	22.39	2.27

Table 2: Correlations

	Agen	Grow	Prof	Tang	Size	lagAgen	lagGrow	lagProf	lagTang	lagSize	Age
Agen	100.0%										
Grow	-4.6%	100.0%									
Prof	-9.3%	37.8%	100.0%								
Tang	-38.8%	-1.4%	-4.1%	100.0%							
Size	-31.1%	18.6%	7.3%	39.9%	100.0%						
lagAgen	90.2%	7.2%	-1.5%	-40.3%	-30.8%	100.0%					
lagGrow	2.5%	11.8%	12.8%	-8.6%	10.5%	-2.4%	100.0%				
lagProf	-8.4%	12.6%	40.5%	-8.2%	9.8%	-9.1%	50.7%	100.0%			
lagTang	-38.8%	-2.8%	-4.2%	95.4%	37.5%	-38.9%	-12.6%	-10.0%	100.0%		
lagSize	-30.9%	5.4%	2.8%	41.4%	98.7%	-33.0%	8.7%	8.2%	39.0%	100.0%	
Age	-8.9%	1.0%	-0.5%	-6.1%	18.3%	-9.5%	2.1%	0.2%	-6.1%	18.2%	100.0%

6 Results

6.1 Cox regression

The results of the Cox regression are provided in Table 3 (for the full model, see Table A.III.1, Appendix III). As mentioned earlier, we gradually added determinants which are perceived as potential causes of failure of SPCs. Column 1 (Cox (1)) contains exclusively financial and managerial determinants which are particularly based on the financial variables. Next, Column 2 (Cox (2)) includes age of SPCs, Column 3 (Cox (3)) adds their size and Column 4 (Cox (4)) contains governance structure. At the end, we situate policy in Column 5 (Cox (5)) and industry affiliation in Column 6 (Cox (6)) in our model.

Based on values of Log likelihood and AIC criterion, we can point out that the last estimation, which contains all of the included causes of failure, is the best one. Referring to this specification, we find that growth, profitability, tangibility, age, size, policy and industry affiliation impact on the probability of bankruptcy in SPCs. However, governance structure, measured by the legal form, does not show a significant relation in any of specifications. The reason for this might be the fact that all SPCs have for-profit legal forms and that they fall under the same commercial law. Furthermore, all of these organisations have to meet a set of formal criteria to become a SPC. Therefore, this finding might confirm that the regulations for Belgian for-profit SPCs do not contribute to their probability of bankruptcy. Finally, we also find that potential agency problems, which are significant in Cox (1) - Cox (4), are annihilated when introducing regional policy in Cox (5) and Cox (6).

Table 4 juxtaposes the hypotheses proposed in Section 2 with our results. In the case of growth, profitability, tangibility, size, policy and industry affiliation, our initial hypotheses are fully supported. In the case of potential agency problems, we are partly able to support our hypothesis that potential agency problems are positively associated with the probability of bankruptcy. As long as we do not control for the regional policy this hypothesis is supported, and then it loses its significance. Furthermore, with respect to age of SPCs, we do not find a relation in line with our expectations. To double check this relation, we also look at the fixed effect of being a young[7] SPC (Age < 5), in the place of the age variable. We find that being a young enterprise decreases the

[7] 48% of observation were included in this group.

Table 3: Cox regression

	(1)	(2)	(3)	(4)	(5)	(6)
Causes Failure	Cox	Cox	Cox	Cox	Cox	Cox
Potential Agency Problems						
Agen	0.178***	0.173***	0.139***	0.137***	-0.0770	-0.0903
	(0.0467)	(0.0476)	(0.0483)	(0.0492)	(0.0596)	(0.0662)
Growth						
lagGrow	0.0203	0.0315	0.146	0.133	0.104	0.601
	(0.222)	(0.224)	(0.236)	(0.238)	(0.253)	(0.366)
Grow	-0.0388	-0.0539	0.0897	0.0821	0.475**	0.886***
	(0.192)	(0.194)	(0.203)	(0.203)	(0.218)	(0.271)
Profitability						
lagProf	-0.0970	-0.103	-0.0606	-0.0333	-0.171	-0.886**
	(0.296)	(0.295)	(0.287)	(0.291)	(0.339)	(0.388)
Prof	-0.411*	-0.388	-0.420*	-0.437*	-0.850***	-1.332***
	(0.237)	(0.237)	(0.228)	(0.229)	(0.282)	(0.325)
Tangibility						
Tang	-1.956***	-2.019***	-1.768***	-1.713***	-1.590***	-1.877***
	(0.464)	(0.469)	(0.477)	(0.480)	(0.474)	(0.565)
Age						
Age		-0.00995	-0.00647	-0.00590	0.130***	0.137***
		(0.00627)	(0.00607)	(0.00604)	(0.0115)	(0.0133)
Size						
Size			-0.207***	-0.209***	-0.270***	-0.395***
			(0.0781)	(0.0782)	(0.0778)	(0.0932)
Governance Structure						
LF1				0.260	0.0827	0.0533
				(0.260)	(0.271)	(0.296)
Policy						
Flanders					29.36***	29.38***
					(0.364)	(0.441)
Wallonia					32.04	32.72
					(0)	(0)
Industry Affiliation						
						$YES^{\natural}$
Observations	2,103	2,103	2,103	2,103	2,103	2,103
Log likelihood	-633.316	-631.805	-628.224	-627.702	-570.840	-528.658
AIC	1.278.63	1,277.17	1,272.45	1,273.40	1,161.68	1,111.32

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

$\natural$: Sectors with the significant differences: C, H, L, N, Q, S

Table 4: Hypotheses versus Results

Failure causes	Hypotheses	Results
Potential Agency Problems	High ratio of potential agency problems is positively associated with the probability of bankruptcy.	Partly supported (true if the regional policy is not included)
Growth	Low ratio of growth is positively associated with the probability of bankruptcy.	Supported
Profitability	Lack of profitability is positively associated with the probability of bankruptcy.	Supported
Tangibility	Low ratio of tangibility is positively associated with the probability of bankruptcy.	Supported
Age	Age is negatively associated with the probability of bankruptcy.	Not supported, the opposite relation is found
Size	Size is negatively associated with the probability of bankruptcy.	Supported
Competition	Competition is positively associated with the probability of bankruptcy.	Not tested
Governance Structure	Governance structure is associated with the probability of bankruptcy.	Not supported
Policy	Policy is associated with the probability of bankruptcy.	Supported
Industry Affiliation	Industry affiliation is associated with the probability of bankruptcy.	Supported

probability of bankruptcy, in line with the previous finding. This shows that with respect to this criterion SPCs behave differently than for-profit firms (start-ups) and non-profit organisations. We speculate that the reason for this might be the fact that SPCs are well capitalised in contrast to non-profit organisations and for-profit firms, which, in many cases, are under-capitalised. However, as supported by Hager et al. (2004), in the case of older non-profit organisations, when struggling with a lack of government funding the probability of being closed is higher than in the opposite case. Results in Table 3 show that the older the SPC is, the higher probability of bankruptcy it faces. As discussed by Thirlaway et al. (2014), the sustainability of British SEs was also more likely influenced by their strategic focus than their age. Therefore, one might conclude that age of neither SEs nor SPCs does not increase their sustainability.

6.2 Logistic regression

In this subsection we run logistic regression as a robustness for our findings. Comparing the differences between Table 3 and Table 5 (full specification in Table A.III.2) it should be noted that the Cox regressions detect additional differences among SPCs in growth (GROW), lagged profitability (lagProf), and policy (Flanders) which are not identified by the logistic regression. In the case of the logistic regression, the number of significant

Table 5: Logit

VARIABLES	(1) Logit	(2) Logit	(3) Logit	(4) Logit	(5) Logit	(6) Logit
Agen	0.248***	0.241***	0.216***	0.212***	-0.0806	-0.206*
	(0.0542)	(0.0547)	(0.0553)	(0.0566)	(0.0897)	(0.124)
lagGrow	0.180	0.196	0.241	0.213	0.368	0.834*
	(0.287)	(0.288)	(0.283)	(0.284)	(0.385)	(0.482)
Grow	0.0216	0.0182	0.111	0.0990	0.274	0.746*
	(0.261)	(0.264)	(0.257)	(0.257)	(0.307)	(0.401)
lagProf	-0.255	-0.271	-0.159	-0.150	-0.0576	-0.838
	(0.375)	(0.375)	(0.364)	(0.368)	(0.460)	(0.605)
Prof	-0.781**	-0.774**	-0.753**	-0.762**	-1.722***	-2.519***
	(0.340)	(0.342)	(0.328)	(0.329)	(0.463)	(0.542)
Tang	-2.154***	-2.217***	-1.988***	-1.905***	-1.632***	-2.744***
	(0.486)	(0.492)	(0.504)	(0.507)	(0.593)	(0.766)
Age		-0.00843	-0.00572	-0.00490	0.542***	0.614***
		(0.00612)	(0.00598)	(0.00597)	(0.0561)	(0.0671)
Size			-0.172**	-0.178**	-0.416***	-0.771***
			(0.0816)	(0.0817)	(0.105)	(0.146)
LF1				0.420	0.489	0.707*
				(0.272)	(0.348)	(0.426)
Flanders					56.77	55.35
					(1,423)	(578.5)
Wallonia					67.97	69.15
					(1,423)	(578.5)
Industry						$YES^{\natural}$
Constant	-2.895***	-2.757***	-1.813***	-2.116***	-71.18	-73.04
	(0.195)	(0.214)	(0.487)	(0.530)	(1,423)	(578.5)
Observations	2,103	2,103	2,103	2,103	2,103	1,753

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
$\natural$: Sectors with the significant differences: C, H , L, N, Q, S

determinants is lower. Therefore, based on this specification we will not be able to support our hypotheses about growth and policy.

Applying this methodology, we can also estimate marginal effects next to the direction of changes in the probability of bankruptcy. Table 6 includes the margins of Logit (6) for determinants that impact significantly on the probability of bankruptcy. The effect of 1% changes for each of variables is presented in Column (2) - Column (9).

We find that an increase of 1% in Prof and in Tang results in a decrease in the probability of bankruptcy of 6.7% and 7.3%. This shows how important financial health is for SPCs. A decrease in any of these two variables will bring the opposite result which means that lack of profitability and low ratio of tangibility highly contribute to a bankruptcy event.

Thus, the increase of 1% in Age brings an increase in the probability of bankruptcy of 1.6%, while the increase of 1% in Size decreases the probability of bankruptcy of 2.1%. As

Table 6: Marginal effects

textbfMargins	Prof	Tang	Age	Size	C	H	L	N	Q	S
dy/dx	-0.067	-0.073	0.016	-0.021	0.048	0.096	0.130	0.049	0.063	0.073

discussed in Subsection 6.1, we look for the reasons why the age is positively associated with the probability of bankruptcy. We suggest that potentially SPCs are well capitalised at the beginning of their activities. Furthermore, one might also state that if the maturity of an SPC goes hand in hand with its growth, then the SPC is able to continue its activities in the long term. Finally, those SPCs that focus their activities in sectors C, H, L, N, Q and S struggle with a higher probability of bankruptcy.

7 Discussion and concluding remarks

In this paper, we propose a dynamic framework which provides a comprehensive analysis of the conditions contributing to the increase or decrease in the probability of bankruptcy of SPCs. This research has identified the main causes of failure of SPCs and described the circumstances under which they minimise the risk of bankruptcy. The majority of the strategic variables studied in this paper showed a significant relationship, both positive and negative, to the probability of their financial collapse.

The first value added to the literature is the comprehensive list of causes of bankruptcy of SPCs that we introduced. This paper measures the impact on managerial, financial and regional levels, as well as taking into consideration the legal regulations, policy and sector in which SPCs fulfil their social mission. The presented model was fed with data describing potential agency problems, growth, profitability, tangibility, age, size, competition, governance structure, policy and industry affiliation, at the same time to measure which determinants and their influence on the probability of bankruptcy. These issues have not been tested together so far. The second value added is a focus on SPCs that run for-profit businesses with the goal of the social mission realisation. They exploit business activities mainly to support their social activities. These enterprises have not been tested in this context before.

The findings of this research support the hypotheses that the financial health of these organisations is an important cause of their success. However, we have also pointed out that, in addition to the internal issues (captured by our financial ratios), the main causes

of failure might be on regional levels, as well as potentially being related to local and sectoral regulations, political features and specific scopes of interest in which SPCs fulfil their social mission, within defined sectors.

We find that policy, captured by the regional affiliation, is one of the environmental and institutional characteristic which highly impacts the probability of bankruptcy. In the case of SPCs operating in Belgium, those that conduct their activities in Flanders face a significantly higher probability of bankruptcy then those that operate in Brussels. Furthermore, we point out that industry affiliation might be also a crucial factor of the financial collapses of SPCs. There are sectors which face much higher probability of bankruptcy than others. The reason for this might be the lack of support (or less support) from grants, subsidies or vouchers. Finally, we find that the age of SPC is positively associated with the probability of bankruptcy. We expect that SPCs are better capitalised at the beginning of their activities than non-profits and for-profits owing to meeting a set of formal criteria to become an SPC. Hence, if the maturity of an SPC goes hand in hand with its growth, then the SPC is able to continue its activities in the long term.

In line with previous research on POs and NPOs, we find that SPCs should try to keep their collateral at the highest level possible in order to minimise the probability of their bankruptcy. They should also pay close attention to their efficiency to convince potential capital providers that an organisation does not struggle with any financial problems. Furthermore, potential agency problems and the lack of growth might lead to an increase in the probability of bankruptcy as well. Therefore, founders and managers should cooperate with the common goal of running a successful SE.

The scoring tool introduced in this paper can be a useful instrument for practitioners, social authorities, capital providers as well as for the managers of social enterprises, for evaluating the current situation of SEs. It is our hope that both practitioners and scientists will treat this model as a first stage of risk management in the third sector.

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version of the paper.

Appendix I

Table A.I.1: Summary of the sample

Category		Normal	Bankrupt	Rate of bankruptcy per category	Global rate of bankruptcy
Total number:		453	73	13.88%	
Legal form:					
	LF1	330	53	13.84%	10.08%
	LF2	123	20	13.99%	3.80%
Region:					
	Flanders	127	16	11.19%	3.04%
	Brussels	50	4	7.41%	0.76%
	Wallonia	276	53	16.11%	10.08%
Sector[a]					
	A :Agriculture, forestry and fishing	9	0	0.00%	0.00%
	B: Mining and quarrying	0	0		
	C: Manufacturing	20	3	13.04%	0.57%
	D: Electricity, gas, steam and air conditioning supply	2	0	0.00%	
	E: Water supply; sewerage; waste management	19	0	0.00%	
	F: Construction	38	6	13.64%	1.14%
	G: Wholesale and retail trade; repair of motor vehicles	27	4	12.90%	0.76%
	H: Transporting and storage	9	2	18.18%	0.38%
	I: Accommodation and food service activities	28	4	12.50%	0.76%
	J: Information and communication	7	1	12.50%	0.19%
	K: Financial and insurance activities	10	0	0.00%	
	L: Real estate activities	55	1	1.79%	0.19%
	M:Professional, scientific and technical activities	33	2	5.71%	0.38%
	N:Administrative and support service activities	107	25	18.94%	4.75%
	O: Public administration; compulsory social security	1	0	0.00%	
	P: Education	10	0	0.00%	
	Q: Human health and social work activities	118	30	20.27%	5.70%
	R: Arts, entertainment and recreation	22	1	4.35%	0.19%
	S: Other services activities	22	4	15.38%	0.76%
	T: Activities of households	2	2	50.00%	0.38%
	U: Activities of extraterritorial organisations and bodies	0	0		

[a]Sectors with labels from A to U according to BCE-NACBEL, details available:
$http://economie.fgov.be/fr/modules/publications/bce/codes\_nacebel.jsp$
One SE can operate in more than one sector; therefore the sum of ratios with respect to the sectors is above 13.88%.

Appendix II

Table A.II.1: Variables' full names and their abbreviations

Abbreviation	Variable's full name
AmPay	Amounts payable th EUR
CapRes	Capital and reserves th EUR
CapSubs	Capital subsidies granted by public authorities, credited for income of the year th EUR
CurA	Current assets th EUR
DebtCost	Debt charges th EUR
DebtL	Debts payable after 1 year th EUR
DebtS	Debts payable within 1 year th EUR
Div	Dividends th EUR
FinCharg	Financial charges th EUR
FinDebt	Financial debts th EUR
FixA	Fixed assets th EUR
IncTax	Income taxes th EUR
InterSubs	Interest subsidies granted by public authorities, credited for income of the year th EUR
InvGra	Investment grants th EUR
LabCost	Remun., soc. security costs, pensions th EUR
Labour	Idem, full-time employed
LabourAvg	Average number of staff calculated in full-time equiv. th
OperPL	Operating P/L th EUR
PLbTax	P/L before taxes th EUR
Profit	Profit for the year th EUR
ProvLiab	Provisions for liabilities and charges th EUR
Tax	Taxes th EUR
TotA	Total assets th EUR
TranFromPostTax	Transfer from postponed taxes th EUR
TranToPostTax	Transfer to postponed taxes th EUR
Turn	Turnover th EUR
WrOff	Amounts wr. off stocks & trade debtors th EUR

Appendix III

Table A.III.1: Cox regression

	(1)	(2)	(3)	(4)	(5)	(6)
Causes Failure	Cox	Cox	Cox	Cox	Cox	Cox
Agen	0.178***	0.173***	0.139***	0.137***	-0.0770	-0.0903
	(0.0467)	(0.0476)	(0.0483)	(0.0492)	(0.0596)	(0.0662)
lagGrow	0.0203	0.0315	0.146	0.133	0.104	0.601
	(0.222)	(0.224)	(0.236)	(0.238)	(0.253)	(0.366)
Grow	-0.0388	-0.0539	0.0897	0.0821	0.475**	0.886***
	(0.192)	(0.194)	(0.203)	(0.203)	(0.218)	(0.271)
lagProf	-0.0970	-0.103	-0.0606	-0.0333	-0.171	-0.886**
	(0.296)	(0.295)	(0.287)	(0.291)	(0.339)	(0.388)
Prof	-0.411*	-0.388	-0.420*	-0.437*	-0.850***	-1.332***
	(0.237)	(0.237)	(0.228)	(0.229)	(0.282)	(0.325)
Tang	-1.956***	-2.019***	-1.768***	-1.713***	-1.590***	-1.877***
	(0.464)	(0.469)	(0.477)	(0.480)	(0.474)	(0.565)
Age		-0.00995	-0.00647	-0.00590	0.130***	0.137***
		(0.00627)	(0.00607)	(0.00604)	(0.0115)	(0.0133)
Size			-0.207***	-0.209***	-0.270***	-0.395***
			(0.0781)	(0.0782)	(0.0778)	(0.0932)
LF1				0.260	0.0827	0.0533
				(0.260)	(0.271)	(0.296)
Flanders					29.36***	29.38***
					(0.364)	(0.441)
Wallonia					32.04	32.72
					(0)	(0)
A						-40.99
						(6.967e+08)
C						1.810***
						(0.482)
E						-40.35
						(5.068e+08)
F						0.656
						(0.612)
G						-0.210
						(0.758)
H						2.508***
						(0.593)
I						1.480**
						(0.627)
J						0.526
						(0.775)
K						-37.85
						(3.860e+08)
L						2.780***
						(0.665)
M						-1.324
						(1.020)
N						1.709***
						(0.367)
P						-39.00
						(4.932e+08)
Q						1.375***
						(0.343)
R						-41.84
						(2.348e+08)
S						1.719***
						(0.632)
T						2.055*
						(1.078)
Observations	2,103	2,103	2,103	2,103	2,103	2,103
Log likelihood	-633.316	-631.805	-628.224	-627.702	-570.840	-528.658
AIC	1.278.63	1,277.17	1,272.45	1,273.40	1,163.68	1,113.32

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table A.III.2: Logit

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Logit	Logit	Logit	Logit	Logit	Logit
Agen	0.248***	0.241***	0.216***	0.212***	-0.0806	-0.206*
	(0.0542)	(0.0547)	(0.0553)	(0.0566)	(0.0897)	(0.124)
lagGrow	0.180	0.196	0.241	0.213	0.368	0.834*
	(0.287)	(0.288)	(0.283)	(0.284)	(0.385)	(0.482)
Grow	0.0216	0.0182	0.111	0.0990	0.274	0.746*
	(0.261)	(0.264)	(0.257)	(0.257)	(0.307)	(0.401)
lagProf	-0.255	-0.271	-0.159	-0.150	-0.0576	-0.838
	(0.375)	(0.375)	(0.364)	(0.368)	(0.460)	(0.605)
Prof	-0.781**	-0.774**	-0.753**	-0.762**	-1.722***	-2.519***
	(0.340)	(0.342)	(0.328)	(0.329)	(0.463)	(0.542)
Tang	-2.154***	-2.217***	-1.988***	-1.905***	-1.632***	-2.744***
	(0.486)	(0.492)	(0.504)	(0.507)	(0.593)	(0.766)
Age		-0.00843	-0.00572	-0.00490	0.542***	0.614***
		(0.00612)	(0.00598)	(0.00597)	(0.0561)	(0.0671)
Size			-0.172**	-0.178**	-0.416***	-0.771***
			(0.0816)	(0.0817)	(0.105)	(0.146)
LF1				0.420	0.489	0.707*
				(0.272)	(0.348)	(0.426)
Flanders					56.77	55.35
					(1,423)	(578.5)
Wallonia					67.97	69.15
					(1,423)	(578.5)
o.A						-
C						1.837***
						(0.648)
o.E						-
F						1.558*
						(0.797)
G						-0.788
						(0.970)
H						3.618***
						(0.916)
I						1.751*
						(0.954)
J						0.865
						(1.699)
o.K						-
L						4.875***
						(0.975)
M						-4.355
						(5.354)
N						1.856***
						(0.505)
o.P						-
Q						2.352***
						(0.516)
o.R						-
S						2.732***
						(0.888)
T						1.471
						(1.289)
Constant	-2.895***	-2.757***	-1.813***	-2.116***	-71.18	-73.04
	(0.195)	(0.214)	(0.487)	(0.530)	(1,423)	(578.5)
Observations	2,103	2,103	2,103	2,103	2,103	1,753

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

5 sectors omitted due to the small number of observations: A, E, K, P, R

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