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Vegetative cycle and bankruptcy predictors of agricultural firms

Mário Santiago Céu[1], Raquel Medeiros Gaspar[2]*

[1]*Advance/Research in Social Sciences and Management and ISEG – Lisbon School of Economics and Management, Universidade de Lisboa, Lisboa, Portugal*
[2]*Cemapre/Research in Economics and Mathematics and ISEG – Lisbon School of Economics and Management, Universidade de Lisboa, Lisboa, Portugal*

**Corresponding author: mariosantiago@phd.iseg.ulisboa.pt*

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Electronic supplementary material

Supplementary Figure S1
Supplementary Tables S1–S3

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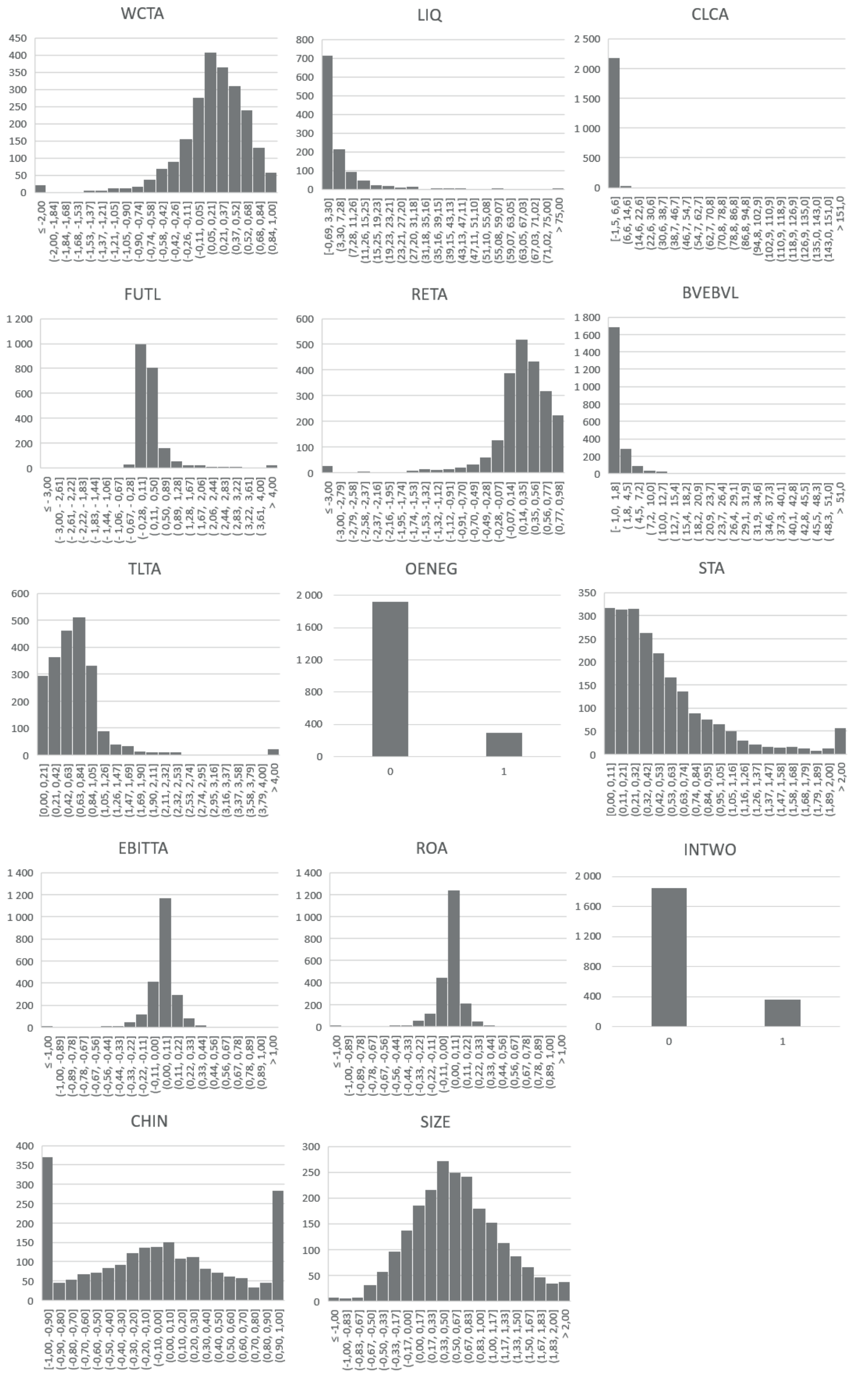

Figure S1. Distribution charts

Source: Own elaboration

Table S1. Bankrupt firms by bankruptcy type

Bankruptcy type	2015	2016	2017	2018	2019	Totals
Firm's request	4	6	6	11	14	41
Lender's request	6	1	6	7	7	27
Without court decision	4	3	1	3	4	15

Source: Own elaboration

Original Paper

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Table S2. Descriptive statistics of variables

Ratios	According to the financial health							According to the vegetative cycle						
	N	Firms	Mean	Median	SD	Min.	Max.	*N*	Firms	Mean	Median	SD	Min.	Max.
WCTA	2 145	H	0.162	0.210	0.529	–5.739	0.983	1 039	NP	0.150	0.229	0.786	–16.810	0.973
	83	B	–0.389	0.002	2.016	–16.810	0.997	1 189	P	0.133	0.188	0.515	–4.923	0.997
LIQ	2 145	H	5.670	2.140	10.115	0.017	95.718	1 039	NP	5.152	1.920	9.272	0.000	95.718
	82	B	12.063	0.959	77.408	–0.689	699.301	1 188	P	6.564	2.142	22.810	–0.689	699.301
CLCA	2 145	H	1.092	0.467	2.756	0.010	60.039	1 039	NP	3.202	0.521	68.060	0.010	2 191.624
	83	B	41.210	0.997	254.793	–1.452	2 191.624	1 189	P	2.049	0.466	23.558	–1.452	780.443
FUTL	2 145	H	0.357	0.126	1.203	–5.989	29.811	1 027	NP	0.310	0.127	0.901	–5.989	9.634
	64	B	–0.093	0.000	0.381	–1.549	1.112	1 182	P	0.374	0.114	1.392	2.652	29.811
RETA	2 145	H	0.203	0.301	0.916	–23.618	0.978	1 039	NP	0.155	0.300	1.172	–23.618	0.978
	83	B	–0.720	–0.015	2.541	–16.117	0.886	1 189	P	0.180	0.286	0.904	–14.690	0.976
BVEBVL	2 145	H	2.789	0.618	16.365	–0.958	646.009	1 039	NP	2.225	0.577	6.224	–0.958	73.873
	83	B	0.480	0.076	2.301	–0.941	18.265	1 189	P	3.121	0.591	21.210	–0.934	646.009
TLTA	2 145	H	0.706	0.618	0.859	0.002	24.034	1 039	NP	0.767	0.634	1.122	0.013	24.034
	83	B	1.511	0.930	2.153	0.052	16.976	1 189	P	0.708	0.629	0.770	0.002	15.156
OENEG	2 145	H	0.123	0	0.329	0	1	1 039	NP	0.139	0	0.346	0	1
	83	B	0.446	0	0.500	0	1	1 189	NP	0.132	0	0.339	0	1
STA	2 145	H	0.028	0.028	0.169	–2.630	2.011	1 036	NP	0.015	0.031	0.210	–2.630	1.004
	64	B	0.558	0.251	0.0670	0.008	3.537	1 183	P	0.410	0.296	0.476	0.000	7.344
EBITTA	2 145	H	0.028	0.028	0.169	–2.630	2.011	1 036	NP	0.015	0.031	0.210	–2.630	1.004
	78	B	–0.249	–0.051	0.540	–3.365	0.535	1 187	P	0.021	0.023	0.192	–3.365	2.011
ROA	2 145	H	0.012	0.016	0.162	–2.630	1.833	1 036	NP	–0.002	0.016	0.204	–2.630	0.878
	78	B	–0.269	–0.067	0.544	–3.383	0.442	1 187	P	0.006	0.013	0.188	–3.383	1.833
INTWO	2 145	H	0.152	0	0.360	0	1	1 025	NP	0.160	0	0.367	0	1
	63	B	0.476	0	0.503	0	1	1 183	P	0.163	0	0.370	0	1
CHIN	2 145	H	–0.053	–0.053	0.646	–1	1	1 024	NP	–0.032	–0.012	0.631	–1	1
	62	B	–0.177	–0.203	0.662	–1	1	1 183	P	–0.077	–0.093	0.659	–1	1
SIZE	2 145	H	0.608	0.569	0.608	–1.220	3.381	1 039	NP	0.592	0.583	0.595	–1.220	2.905
	83	B	0.511	0.583	0.701	–1.148	2.905	1 189	P	0.614	0.554	0.626	–1.161	3.381

H – healthy, B – bankrupt; NP – non-perennial crop; P – perennial crop; *WCTA* – working capital : total assets; *LIQ* – current assets : current liabilities; *CLCA* – current liabilities : current assets; *FUTL* – funds provided by operations : total liabilities; *RETA* – retained earnings : total assets; *BVEBVL* – book value of equity : book value of total liabilities; *TLTA* – total liabilities : total assets; *OENEG* – 1 if total liabilities exceed total assets, 0 otherwise; *STA* – sales : total assets; *EBITTA* – *EBIT* : total assets; *EBIT* – earnings before interest and taxes; *ROA* – net income : total assets; *INTWO* – 1 if net income negative last two years; *CHIN* – $(NI_t - NI_{t-1}) : (|NI_t| + |NI_{t-1}|)$, where *NI* – net income; *SIZE* – log (total assets : GNP price-level index); GNP – gross national product; Source: Own elaboration

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Table S3. One-sample Kolmogorov-Smirnov test

Ratios	*N*	Normal mean	Parameters SD	Test statistics	*P*-value (2-tailed)
WCTA	2 228	0.1410	0.6556	0.161	0.000***
LIQ	2 227	5.9055	17.8336	0.370	0.000***
CLCA	2 228	2.5866	49.5525	0.479	0.000***
FUTL	2 209	0.3440	1.1894	0.296	0.000***
RETA	2 228	0.1683	1.0375	0.257	0.000***
BVEBVL	2 228	2.7029	16.0696	0.410	0.000***
TLTA	2 228	0.7356	0.9507	0.255	0.000***
OENEG	2 228	0.1351	0.3419	0.519	0.000***
STA	2 209	0.5403	0.6402	0.199	0.000***
EBITTA	2 223	0.0184	0.2007	0.208	0.000***
ROA	2 223	0.0020	0.1957	0.224	0.000***
INTWO	2 208	0.1617	0.3682	0.508	0.000***
CHIN	2 207	–0.0564	0.6464	0.072	0.000***
SIZE	2 228	0.6040	0.6118	0.035	0.000***

***, ** and * significance levels at 0.01, 0.05 and 0.10 respectively; *WCTA* – working capital : total assets; *LIQ* – current assets : current liabilities; *CLCA* – current liabilities : current assets; *FUTL* – funds provided by operations : total liabilities; *RETA* – retained earnings : total assets; *BVEBVL* – book value of equity : book value of total liabilities; *TLTA* – total liabilities : total assets; *OENEG* – 1 if total liabilities exceed total assets, 0 otherwise; *STA* – sales : total assets; *EBITTA* – *EBIT* : total assets; *EBIT* – earnings before interest and taxes; *ROA* – net income : total assets; *INTWO* – 1 if net income negative last two years; *CHIN* – $(NI_t - NI_{t-1}) : (|NI_t| + |NI_{t-1}|)$, where *NI* – net income; *SIZE* – log (total assets : GNP price-level index); GNP – gross national product

Source: Own elaboration