

Break-Up Analysis: a method to regain trust in business transactions

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Research Position

- AIS are socio technical systems
organized data, human resources,
techniques, procedures [Marchi]
- IS serve as information provider for decisions
[Sutton and Arnold]
- The decision: critical judgement of the
solvency of a company
- Constructivistic approach (design science)

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Motivation

- Facing a worldwide depression – insolvencies are an everyday event.
- Method to judge on the financial health of a company based on available financial data, supporting stakeholders in their decisions.
- Contributes to regain trust in business transactions.

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State of the Art - Altman

1. The Z-Score : identification of bankrupt companies.
2. The grey zone.

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Break-up Analysis

- Break-Up: all businesses are closed; assets must be sold; no new business is allowed and all the existing contracts cannot be fulfilled anymore.
- break-up logic: check, whether the company is able to extinguish all liabilities at any time; check the capacity of corporate assets to repay the contracted liabilities completely and permanently.
- ...going concern concept ?

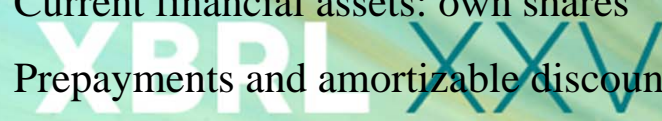
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<i>Cut off elements</i>	<i>Statement</i>
Total receivables from shareholders	BS
Total intangible fixed assets (FA)	BS
Tangible FA: assets in process of formation and advances	BS
Financial FA: equity investments in subsi., associated and parent companies	BS
Financial FA: receivables due from subsi, associated and parent companies	BS
Financial FA :rec. due from third parties :other related companies ; finan. Ass. advances	N
Financial FA :own shares	BS
Current assets (CA) Inventories: contract work in progress; advances	BS
CA Receivables: due from subsidiary, associated and parent companies	BS
CA Receivables :Total advances on tax payments	BS
CA Rec.: rec. due from third parties: rec. due from other related companies; services advances.	N
CA Receivables: Invoices to be issued	N
Current financial assets: investments in subsi., associated and in parent companies.	BS
Current financial assets: own shares	BS
Prepayments and amortizable discount on issued debt	BS, N
Dividends to be paid	RSR



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Break-up Value (BUV)

The resulting value is the so called Break-up Value (BUV).

The BUV will be negative, if the company is not able to fulfil its obligation.

The BUV will be positive, if the company is solvent.

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Sample Selection

Bankrupt group (93 resulted in 30)

- filed a bankruptcy petition (Fallimento);
- or started a pre-bankruptcy agreement (Concordato preventivo);
- during the period 2011-2012.
- 37 companies that used the condensed form of the Italian annual report and 26 companies with no financial data available for years 2011, 2010 and 2009 were then removed from the list.

Non-bankrupt group

- consists of a sample of 30 SMEs chosen from the database Bilanci di Marca Awards.

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Sample Classification

- classified by EU NACE codes
- ... to be able to decide whether the companies are micro, small or medium -sized.*
- grouped by number of employees;
- by annual turnover;
- by total assets

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Application of the Classification

Number of companies

<i>bankrupt</i>	<i>non-bankrupt</i>	<i>NACE code</i>
21	21	C-Manufacturing
8	8	G-Wholesale and retail trade
1	1	I - Accommodation and food service activities
<i>30</i>	<i>30</i>	

	<i>bankrupt</i>	<i>non-bankrupt</i>
small	9	9
medium-sized	21	21
<i>Total SMEs</i>	<i>30</i>	<i>30</i>

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Results: all over

	<i>non-bankrupt</i>	<i>bankrupt</i>
predicted as non-bankrupt	75	33
predicted as bankrupt	15	57

Overall, the BUA predicted 132 financial statements correct and 48 wrong. Compared to that the Z"-score predicted 108 correct and 72 wrong.

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Results: per year

			<i>non-bankrupt</i>	<i>bankrupt</i>
Year n-2	predicted as non-bankrupt	BUV	26	18
		Z''	12	14
	predicted as bankrupt	BUV	4	12
		Z''	18	16
Year n-1	predicted as non-bankrupt	BUV	25	12
		Z''	15	7
	predicted as bankrupt	BUV	5	18
		Z''	15	23
Year n	predicted as non-bankrupt	BUV	24	3
		Z''	12	0
	predicted as bankrupt	BUV	6	27
		Z''	18	30

Results: overall error rate

- By comparing the total error (total type one and total type two errors) rates the overall prediction becomes measureable:
- BUA has a rate of 27%
- Z''-score has a rate 40%.

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Results: among the grey zone

- The Z''-score defined 54 financial statements as belonging to the grey zone.
- The BUA classified 36 financial statements (corresponding to 66%) of the grey zone right (6 as bankrupt, which have been bankrupt, and 30 as non-bankrupt, which are non-bankrupt) and 18 wrong.

Results: among the grey zone (error rates)

		<i>non-bankrupt</i>	<i>bankrupt</i>
Total <i>(54 financial statements fell in the gz)</i>	predicted as non-bankrupt	30	12
	predicted as bankrupt	6	6
Year n-2 <i>(24 companies)</i>	predicted as non-bankrupt	10	8
	predicted as bankrupt	2	4
Year n-1 <i>(16 companies)</i>	predicted as non-bankrupt	8	4
	predicted as bankrupt	2	2
Year n <i>(14 companies)</i>	predicted as non-bankrupt	12	0
	predicted as bankrupt	2	0

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Contribution and further research

1. We predicted the solvent companies and maintained a high quality of the prediction of the bankrupt ones;
2. we classified 66% of FS in the grey zone correctly the second goal of our research is reached as well.

- Sample size;
- the BUA could still be improved by identifying other relevant balance sheet items and by using qualitative variables;
- test the method on an international level
- test for larger companies

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