Documentation `firms` Data

Dataset description

The dataset contains financial ratios, stock price variables, default information as well as ratings and mapped PD scores for S&P. The sample contains information on 3011 publicly traded US firms over the period 1985–2014.

Financial ratios and market variables

The variables have been computed from the yearly financial statements and from daily stock price data. The ratio is set to zero if the denominator was close to zero. All ratios are winsorized at 5%.

Credit ratings

Long term issuer credit ratings from S&P are observed at the end of each year in the sample and the most recent annual financial variables available at the end of the year are matched to the end-of-year ratings.

Default information

The default variable `default` is set to "yes" whenever the company files for Chapter 7 and 11 under the US Bankruptcy law or whenever the rating agency assigns a default rating in the year following the rating observation[1].

PD scores

PD scores are mapped to each rating class by using the default rates. We assume the number of defaults in rating class r follows a binomial distribution:

$$D_r \sim \text{Binomial}(N_r, PD_r)$$

where

$$PD\ score = \text{logit}(PD_r) = \alpha x_r$$

for x_r equal to 1 for the lowest rating class, 2 for the second lowest etc., which ensures monotonicity in the mapped PD scores.

Variables description

For the variable list see Table 1.

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[1]For example, S&P's default definition is: "An obligation rated 'D' is in default or in breach of an imputed promise. For non-hybrid capital instruments, the 'D' rating category is used when payments on an obligation are not made on the date due, unless S&P Global Ratings believes that such payments will be made within five business days in the absence of a stated grace period or within the earlier of the stated grace period or 30 calendar days. The 'D' rating also will be used upon the filing of a bankruptcy petition or the taking of similar action and where default on an obligation is a virtual certainty, for example due to automatic stay provisions. A rating on an obligation is lowered to 'D' if it is subject to a distressed exchange offer."

Variable name	Description
gvkey	company identifier from COMPUSTAT which can be used to track a company over time, while the company name, cusip, or ticker may change over time
conml	company's legal name
gsector	two-digit sector code (according to the Global Industry Classification Standard[2])
sic	industry classification (according to the Standard Industrial Classification[3])
datadate	calendar date of financial statement
datadate_eoy	calendar date on which the ratings are observed corresponding to the end of year
R1	interest rate expenses/total assets
R2	EBITDA/interest rate expenses
R3	1 + EBIT/interest rate expenses
R4	(operating cash flow − capital expenditures + interest rate expenses)/interest rate expenses
R5	current assets/current liabilities
R6	cash/current liabilities
R7	cash equivalents/total assets
R7M	cash equivalents/market value of assets
R8.Altman1	working capital/total assets
R9	fixed assets/total assets
R10	intangible assets/total assets
R11	liabilities/total assets
R11M	liabilities/market value of assets
R12	total debt/total assets
R13	total debt/EBITDA
R14	equity/total assets

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[2]https://en.wikipedia.org/wiki/Global_Industry_Classification_Standard
[3]https://en.wikipedia.org/wiki/Standard_Industrial_Classification

R15	equity/fixed assets
R16	equity/liabilities
R16M.Altman4	market value of equity/total liabilities (This is the forth Altman ratio.)
R17	debt/(debt + equity)
R17M	debt/(debt + market equity)
R18	long term debt/(long term debt + equity)
R18a	short term debt/total debt
R18b	long term debt/total assets
R19	short term debt/common equity
R20.Altman2	retained earnings/total assets (This is the second Altman ratio.)
R21	EBITDA/total assets
R21a.Altman3	EBIT/total assets (This is the third Altman ratio.)
R22	net income/total assets
R22M	net income/market value of assets
R23	EBIT/(total debt + stockholder equity)
R24	EBITDA/total sales
R25	net income/total sales
R26	operating cash flow/total debt
R27	operating cash flow/capital expenditure
R28.Altman5	total sales/total assets (This is the fifth Altman ratio.)
R29	total sales/accounts payable
R30	current liabilities/total sales
R31	total sales/number of employees
R32	inventory growth
R33	sales growth
R34	R&D expenses/total assets

R35	capital expenditures/total assets
R36	capital expenditures/total sales
DIVPAYER	factor variable with "yes" indicating that dividends were payed and "no" otherwise
lAT	log of total assets
lSALE	log of total sales
MB	market value of assets/book value of assets
SIGMA	square root of the sum of squared stock returns over a 3-month period
BETA	stock price beta
EXRET	annualized excess return
RSIZE	relative market size of the company
SPR	long term end of year S&P ratings (7 classes)
SPR21	long term end of year S&P ratings (21 classes)
PDscore.SPR	mapped PD scores for the long term end of year S&P ratings (7 classes)
default	factor variable with "yes" indicating default and "no" non-default