A Comparative Study of Feature Selection and Feature Extraction Methods for Financial Distress Identification. Appendices

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A Feature's list

A.1 Board, top management, shareholders main feature's list (MNG)

#	Name	DoE	No.	Description
1	Director_age	✓	1	Director age
2	Time_after_director_change	✓	1	Quantity of days has passed since the last change. t - last change, where t - analyzed year on January 1
3	Director_change_Num	✓	1	The number of the enterprise director change (since the creation of enterprise)
4	The_same_director_time_before	✓	1	The same director time before, if yes marked 1.
5	Active_directors_at_the_same_time	✓	1	The number of active directors at the same time.
6	Oldest_Owner_age	✓	1	Oldest owner age
7	Time_after_owner_change	✓	1	Quantity of days has passed since the last change. t - last change, where t - analyzed year on January 1
8	Owner_change_Num	✓	1	The number of the enterprise owner change (since the creation of enterprise)
9	The_same_Owner_time_before	✓	1	The same owner time before, if yes marked 1.
10	Active_owner_at_the_same_time	✓	1	The number of active owners at the same time.
11	Director_owner_the_same	✓	1	If director and owner is the same person is marked 1.
12	Oldest_Shareholder_age	✓	1	The oldest shareholder age
13	Time_after_Shareholder_change	✓	1	Quantity of days has passed since the last change. t - last change, where t - analyzed year on January 1
14	Shareholder_change_Num	✓	1	The number of the enterprise shareholder change (since the creation of enterprise)
15	The_same_Shareholder_time_before	✓	1	The same shareholder time before, if yes marked 1.
16	Active_Shareholder_at_the_same_time	✓	1	The number of active shareholders at the same time.
17	Time_after_Board_member_change	✓	1	Quantity of days has passed since the last change. t - last change, where t - analyzed year on January 1

#	Name	DoE	No.	Description
18	Board_change_Num	✓	1	The number of the enterprise board member change (since the creation of enterprise)
19	Board_members_Num	✓	1	The number of the enterprise board member's (now)
20	Board_members_age_mean	✓	1	The mean of board members age
21	Youngest_board_members_age	✓	1	The youngest board members age
22	Oldest_board_members_age	✓	1	The oldest board members age
		Total:	21	

A.2 Financial statement feature list (FS)

#	Name	Y_1	Y_2	No.	Description
1	BSLT100000	✓	✓	2	Total assets
2	BSLT110000	✓	✓	2	Long term assets (Fixed assets)
3	BSLT112000	✓	✓	2	Tangible assets
4	BSLT120000	✓	✓	2	Short term assets (Current assets)
5	BSLT121000	✓	✓	2	Stocks advances and works in progress
6	BSLT121100	✓	✓	2	Stocks
7	BSLT122000	✓	✓	2	Amounts received within one year
8	BSLT122300	✓	✓	2	Other receivables
9	BSLT123000	✓	✓	2	Other short term assets
10	BSLT123300	✓	✓	2	Other short term assets (subcategory)
11	BSLT124000	✓	✓	2	Cash and equivalent
12	BSLT210000	✓	✓	2	Equity (net worth)
13	BSLT211000	✓	✓	2	Capital
14	BSLT211100	✓	✓	2	Issued share capital
15	BSLT215000	✓	✓	2	Undistributed profit (loss) (Retained earning)
16	BSLT220000	✓	✓	2	Grants and subsidies
17	BSLT230000	✓	✓	2	Amounts payable and liabilities
18	BSLT231000	✓	✓	2	Amounts payable after one year and long term liabilities
19	BSLT232000	✓	✓	2	Amounts payable within one year and short term liabilities
20	BSLT232800	✓	✓	2	Other payables and shot term liabilities
21	ISLT010000	✓	✓	2	Sales
22	ISLT020000	✓	✓	2	Cost of goods sold
23	ISLT030000	✓	✓	2	Gross profit (loss)
24	ISLT040000	✓	✓	2	Operating expenses
25	ISLT041000	✓	✓	2	Sales service costs
26	ISLT042000	✓	✓	2	General and administration costs
27	ISLT050000	✓	✓	2	Operating profit (loss)
28	ISLT060000	✓	✓	2	Other activities income
29	ISLT070000	✓	✓	2	Financial and investing activities
30	ISLT080000	✓	✓	2	Profit(loss) from ordinary activities
31	ISLT090000	✓	✓	2	Profit (loss) before tax
32	ISLT100000	✓	✓	2	Income tax
33	ISLT110000	✓	✓	2	Net profit (loss)
34	Net_WC	✓	✓	2	Net working capital = Short term assets - Amounts payable within one year and short term liabilities
35	UND_profit	✓	✓	2	This year undistributed profit (loss) - prev. Undistributed profit (loss)
36	Acc_penalty	✓	✓	2	(FS submission date - FS formation date)/365 → round any 0.25
			Total:	72	

A.3 Financial statement feature's list of Ratios (FS_R)

#	Name	Y_1	Y_2	No.	Description
1	**Cr_ratio**	✓	✓	2	Short term assets / Amounts payable within one year and short term liabilities
2	**Quick_ratio**	✓	✓	2	(Short term assets - Stocks advances and works in progress) / Amounts payable within one year and short term liabilities
3	**Cash_ratio**	✓	✓	2	Cash and equivalent / Amounts payable within one year and short term liabilities
4	WC_Ass	✓	✓	2	Net working capital / Total assets
5	**Gross_profit**	✓	✓	2	Gross profit / Sales
6	Oper_profit	✓	✓	2	Operating profit / Sales
7	**Beforetax_profit**	✓	✓	2	Profit (loss) before taxes / Sales
8	**Net_profit**	✓	✓	2	Net profit (loss) / Sales
9	**ROA**	✓	✓	2	Net profit (loss) / Total assets
10	**ROE**	✓	✓	2	Net profit (loss) / Equity
11	**Equity_multiplier**	✓	✓	2	Total assets / Equity
12	**Inventory_turn**	✓	✓	2	Cost of goods sold / 0.5 * (Stocks advances and works in progress ✓ prev. Stocks advances and works in progress)
13	**WC_turn**	✓	✓	2	Sales / 0.5 * (Net working capital ✓ prev. Net working capital)
14	**FixAss_turn**	✓	✓	2	Sales / 0.5* (Long term assets✓prev. Long term assets)
15	**TotalAss_turn**	✓	✓	2	Sales / 0.5* (Total assets ✓ prev. Total assets)
16	**Days_inventory**	✓	✓	2	365* Inventory turnover
17	Retention_ratio	✓	✓	2	UND_profit / Net profit (loss)
18	**Internal_grow**	✓	✓	2	(ROA*Retention_ratio)/(1-ROA*Retention_ratio)
19	Sustainable_grow	✓	✓	2	(ROE*Retention_ratio)/(1-ROE*Retention_ratio)
20	**CostGoods_Sales**	✓	✓	2	Cost of goods sold / Sales
21	**OperExp_Sales**	✓	✓	2	Operating expenses / Sales
22	**FixAss_TotalAss**	✓	✓	2	Long term assets / Total assets
23	**CrAss_TotalAss**	✓	✓	2	Short term assets / Total assets
24	**Inv_TotalAss**	✓	✓	2	Stocks advances and works in progress / Total assets
25	**Cash_TotalAss**	✓	✓	2	Cash and equivalent / Total assets
26	Equity_TotalAss	✓	✓	2	Equity / Total assets
27	**Liab_TotalAss**	✓	✓	2	Amounts payable and liabilities / Total assets
28	**CrLiab_TotalAss**	✓	✓	2	Amounts payable within one year and short term liabilities / Total assets
29	**Change_TotalAss**	✓	✓	2	(Total assets - prev. Total assets) / prev. Total assets
30	**Change_FXAss**	✓	✓	2	(Long term assets- prev.Long-term assets) / prev. Long-term assets
31	Change_CrAss	✓	✓	2	(Short term assets - prev. Short-term assets) / prev. Short-term assets
32	**Change_Inventory**	✓	✓	2	(Stocks advances and works in progress - prev. Stocks advances and works in progress) / prev. Stocks advance and works in progress
33	**Change_Cash**	✓	✓	2	(Cash and equivalent - prev. Cash and equivalent) / prev. Cash and equivalent
34	Change_Equity	✓	✓	2	(Equity - prev. Equity) / prev. Equity
35	**Change_UND_profit**	✓	✓	2	(Undistributed profit (loss) - prev. Undistributed profit (loss)) / prev. Undistributed profit (loss)

#	Name	Y_1	Y_2	No.	Description
36	**Change_Liab**	✓	✓	2	(Amounts payable and liabilities - prev. Amounts payable and liabilities) / prev. Amounts payable and liabilities
37	Change_CrLiab	✓	✓	2	(Amounts payable within one year and short term liabilities - prev. Amounts payable within one year and short-term liabilities) / prev. Amounts payable within one year and short-term liabilities
38	**Change_Sales**	✓	✓	2	(Sales - prev. Sales) / prev. Sales
39	**Change_Gross_profit**	✓	✓	2	(Gross profit (loss) - prev. Gross profit (loss)) / prev. Gross profit (loss)
40	Change_Oper_prpfit	✓	✓	2	(Operating profit (loss) - prev. Operating profit (loss)) / prev. Operating profit (loss)
41	**Change_Before_tax_profit**	✓	✓	2	(Profit (loss) before tax - prev. Profit (loss) before tax) / prev. Profit (loss) before tax
42	**Change_Net_profit**	✓	✓	2	(Net profit (loss) - prev. Net profit (loss)) / prev. Net profit (loss)
			Total:	84	

A.4 Financial statement register capital change feature's list (FS_CPTL)

#	Name	DoE	No.	Description
1	CPTL_change_freq	✓	1	The number of the issued share capital (equity) change (since the creation of enterprise)
2	CPTL_Value_Eur	✓	1	The last value of issued share capital
3	Change_CPTL	✓	1	(Issued share capital - prev. Issued share capital) / prev. Issued share capital
4	Time_after_CPTL_change	✓	1	Quantity of days has passed since the last change. t - last change, where t - analyzed year on January 1
		Total:	4	

A.5 Enterprise type (E_type)

#	Name	Stable	No.	Description
1	PLL	✓	1	A private limited liability
2	PbLL	✓	1	A public limited liability
3	Ind	✓	1	An individual enterprise
4	SCom	✓	1	A small community
		Total:	4	

A.6 Legal events: Lawsuit feature's list (LawS)

#	Name	DoE	No.	Description
1	LawS_def_Num	✓	1	Number of lawsuits (as a defendant) (since the creation of enterprise).
2	LawS_STI_SSI_def	✓	1	A plaintiff is the State tax intitution or the State Social Insurance institution in the lawsuit, if yes marked 1.
3	Act_LawS_def_Num	✓	1	The number of active lawsuits (as a defendand)
4	Act_LawS_STI_SSI_def	✓	1	A plaintiff is the State tax intitution or The State Social Insurance institution in the active lawsuit, if yes marked 1.
5	Time_after_last_LawS_def	✓	1	Quantity of days has passed since the last lawsuit. t - last change, where t - analyzed year on January 1
6	LawS_pln_Num	✓	1	The number of lawsuits (as a plaintiff)
7	Act_LawS_pln_Num	✓	1	The number of active lawsuits (as a plaintiff)
8	Time_after_last_LawS_pln	✓	1	Quantity of days has passed since the last lawsuit. t - last change, where t - analyzed year on January 1
		Total:	8	

A.7 Legal events: Seized property feature's list (SzPr)

#	Name	DoE	No.	Description
1	SzPr_Num	✓	1	The number of the enterprise seized property by courts (since the creation of enterprise)
2	All_SzPr_min_value_EUR	✓	1	Min value in euros of all enterprise seized property by courts (since the creation of enterprise). Min value of the first amount is given by the court, e.g. if is given 1914,69 EUR ✓ interest, taken in the calculation only 1914.69, or if given 168597,53 EUR ✓ 133,00 Eur, taken in the calculation only 168597,53 EUR. It happens due to extraction from a not-structured comment field.
3	Act_SzPr_Num	✓	1	The active number of the enterprise seized property by courts (since the creation of enterprise).
4	Act_SzPr_min_value_EUR	✓	1	Min value in euros of all enterprise seized property by courts
5	Time_after_last_SzPr	✓	1	Quantity of days have passed since the last seized property. t - last change, where t - analyzed year on January 1
		Total:	5	

A.8 Macro feature's list (Macro_M)

#	Name	Y_1	Y_2	Y_3	No.	Description
1	INFL_MIN	✓	✓	✓	3	The minimum of inflation ratio, from January till December.
2	INFL_MAX	✓	✓	✓	3	The maximum of inflation ratio, from January till December.
3	INFL_MEAN	✓	✓	✓	3	The mean of inflation ratio, from January till December.
4	INFL_MEDIAN	✓	✓	✓	3	The median of inflation ratio, from January till December.
5	INFL_LAST_VALUE	✓	✓	✓	3	The inflation ratio on December.
6	INFL_Change	✓	✓	✓	3	(Inflation ratio$_{12}$ − prev. Inflation ratio$_{12}$)/ prev. Inflation ratio$_{12}$
7	HICP_MIN	✓	✓	✓	3	The minimum of consumer price indices (HICP), from January till December.
8	HICP_MAX	✓	✓	✓	3	The maximum of HICP, from January till December.
9	HICP_MEAN	✓	✓	✓	3	The mean of HICP, from January till December.
10	HICP_MEDIAN	✓	✓	✓	3	The median of HICP, from January till December.
11	HICP_LAST_VALUE	✓	✓	✓	3	The HICP on December.
12	HICP_Change	✓	✓	✓	3	(HICP$_{12}$- prev.HICP$_{12}$)/prev.HICP$_{12}$
13	PPI_MIN	✓	✓	✓	3	The minimum of Producer price indices (PPI), from January till December.
14	PPI_MAX	✓	✓	✓	3	The maximum of PPI, from January till December.
15	PPI_MEAN	✓	✓	✓	3	The mean of PPI, from January till December.
16	PPI_MEDIAN	✓	✓	✓	3	The median of PPI, from January till December.
17	PPI_LAST_VALUE	✓	✓	✓	3	The PPI on December.
18	PPI_Change	✓	✓	✓	3	(PPI$_{12}$ - prev. PPI$_{12}$) / prev. PPI$_{12}$
19	C_Gov_debt_MIN	✓	✓	✓	3	The minimum of Central Government Debt (CGovDebt), from January till December.
20	C_Gov_debt_MAX	✓	✓	✓	3	The maximum of CGovDebt, from January till December.
21	C_Gov_debt_MEAN	✓	✓	✓	3	The mean of CGovDebt, from January till December.
22	C_Gov_debt_MEDIAN	✓	✓	✓	3	The median of CGovDebt, from January till December.
23	C_Gov_debt_LAST_VALUE	✓	✓	✓	3	The CGovDebt on December.
24	C_Gov_debt_Change	✓	✓	✓	3	(CGovDebt$_{12}$ - prev. CGovDebt$_{12}$) / prev. CGovDebt$_{12}$
25	Short_yield_MIN	✓	✓	✓	3	The minimum of Lithuanian short term interest rates (Short_yield), from January till December.
26	Short_yield_MAX	✓	✓	✓	3	The maximum of Short_yield, from January till December.
27	Short_yield_MEAN	✓	✓	✓	3	The mean of Short_yield, from January till December.
28	Short_yield_MEDIAN	✓	✓	✓	3	The median of Short_yield, from January till December.
29	Short_yield_LAST_VALUE	✓	✓	✓	3	The Short_yield on December.
30	Short_yield_Change	✓	✓	✓	3	(Short_yield$_{12}$ - prev. Short_yield$_{12}$) /prev. Short_yield$_{12}$

#	Name	Y_1	Y_2	Y_3	No.	Description
31	Long_yield_MIN	✓	✓	✓	3 2	The minimum of Lithuanian long term interest rates (Long_yield), from January till December.
32	Long_yield_MAX	✓	✓	✓	3 2	The maximum of Long_yield, from January till December.
33	Long_yield_MEAN	✓	✓	✓	3	The mean of Long_yield, from January till December.
34	Long_yield_MEDIAN	✓	✓	✓	3	The median of Long_yield, from January till December.
35	Long_yield_LAST_VALUE	✓	✓	✓	3 2	The Long_yield on December.
36	Long_yield_Change	✓	✓	✓	3	(Long_yield$_{12}$ - prev. Long_yield$_{12}$) / prev. Long_yield$_{12}$
37	Loans_interest_MIN	✓	✓	✓	3	The minimum of Lithuanian loans to enterprises (total interest), from January till December.
38	Loans_interest_MAX	✓	✓	✓	3	The maximum of loans interest, from January till December.
39	Loans_interest_MEAN	✓	✓	✓	3	The mean of loans interest, from January till December.
40	Loans_interest_MEDIAN	✓	✓	✓	3	The median of loans interest, from January till December.
41	Loans_interest_LAST_VALUE	✓	✓	✓	3	The loans interest on December.
42	Loans_interest_Change	✓	✓	✓	3	(Loans interest$_{12}$ - prev. Loans interest$_{12}$)/ prev. Loans interest$_{12}$
43	Yield_10y_MIN	✓	✓	✓	3	The minimum of European central bank Eur yield curves maturity 10 years (Yield_10y), from January till December.
44	Yield_10y_MAX	✓	✓	✓	3	The maximum of Yield_10y, from January till December.
45	Yield_10y_MEAN	✓	✓	✓	3	The mean of Yield_10y, from January till December.
46	Yield_10y_MEDIAN	✓	✓	✓	3	The median of Yield_10y, from January till December.
47	Yield_10y_LAST_VALUE	✓	✓	✓	3	The Yield_10y on December.
48	Yield_10y_Change	✓	✓	✓	3	(Yield_10y$_{12}$ - prev. Yield_10y$_{12}$) / prev. Yield_10y$_{12}$
49	Yield_1y_MIN	✓	✓	✓	3	The minimum of European central bank Eur yield curves maturity 1 year (Yield_1y), from January till December.
50	Yield_1y_MAX	✓	✓	✓	3	The maximum of Yield_1y, from January till December.
51	Yield_1y_MEAN	✓	✓	✓	3	The mean of Yield_1y, from January till December.
52	Yield_1y_MEDIAN	✓	✓	✓	3	The median of Yield_1y, from January till December.
53	Yield_1y_LAST_VALUE	✓	✓	✓	3	The Yield_1y on December.
54	Yield_1y_Change	✓	✓	✓	3	(Yield_1y$_{12}$ - prev. Yield_1y$_{12}$) / prev. Yield_1y$_{12}$
55	US_ExR_MIN	✓	✓	✓	3	The minimum of US to EUR exchange rate (US_ExR), from January till December.
56	US_ExR_MAX	✓	✓	✓	3	The maximum of US_ExR, from January till December.
57	US_ExR_MEAN	✓	✓	✓	3	The mean of US_ExR, from January till December.
58	US_ExR_MEDIAN	✓	✓	✓	3	The median of US_ExR, from January till December.

#	Name	Y_1	Y_2	Y_3	No.	Description
59	US_ExR_LAST_VALUE	✓	✓	✓	3	The US_ExR on December.
60	US_ExR_Change	✓	✓	✓	3	(US_ExR$_{12}$ − prev. US_ExR$_{12}$) / prev.US_ExR$_{12}$
Total:					177	

A.9 Macro feature's list II (Macro_Q)

#	Name	Y_1	Y_2	Y_3	Q	No.	Description
1	GDP_Q	✓	✓	✓	✓	12	The gross domestic product (GDP), at current prices
2	GDP_Change	✓	✓			2	(GDP_Q$_{IV}$- prev. GDP_Q$_{IV}$) /prev.GDP_Q$_{IV}$
3	GDP_perc_Q	✓	✓	✓	✓	12	The gross domestic product (GDP), growth rate
4	GDP_perc_Change	✓	✓			2	(GDP_perc_Q$_{IV}$− - prev. GDP_perc_Q$_{IV}$) /prev.GDP_perc_Q$_{IV}$
5	Unmp_Q	✓	✓	✓	✓	12	Unemployment rate
6	Unmp_Change	✓	✓			2	(Unmp_Q$_{VI}$ − prev. Unmp_Q$_{IV}$)/prev.Unmp_Q$_{VI}$
7	Gov_Debt_Q	✓	✓	✓	✓	12	General Government Debt (Maastricht debt)
8	Gov_Debt_Change	✓	✓			2	(Gov_Debt_Q$_{IV}$− prev. Gov_Debt_Q$_{IV}$) /prev.Gov_DEBT_Q$_{IV}$
9	Oil_price_Q	✓	✓	✓	✓	12	Average prices of extracted petroleum at the extraction place (Oil_prce)
10	Oil_price_Change	✓	✓			2	(Oil_price_Q$_{IV}$ - prev. Oil_price_Q$_{IV}$) /prev.Oil_price_Q$_{IV}$
Total:						70	

A.10 Sectors feature's list (SEC_Nace)

#	Name	DoE	No.	Description
1	Nace_A	✓	1	Agriculture, forestry and fishing
2	Nace_B	✓	1	Mining and quarrying
3	Nace_C	✓	1	Manufacturing
4	Nace_D	✓	1	Electricity, gas, steam and air conditioning supply
5	Nace_E	✓	1	Water supply; sewerage; waste management and remediation activities
6	Nace_F	✓	1	Construction
7	Nace_G	✓	1	Wholesale and retail trade; repair of motor vehicles and motorcycles
8	Nace_H	✓	1	Transporting and storage
9	Nace_I	✓	1	Accommodation and food service activities
10	Nace_J	✓	1	Information and communication
11	Nace_K	✓	0	Financial and insurance activities
12	Nace_L	✓	0	Real estate activities
13	Nace_M	✓	1	Professional, scientific and technical activities
14	Nace_N	✓	1	Administrative and support service activities
15	Nace_O	✓	0	Public administration and defence; compulsory social security
16	Nace_P	✓	1	Education
17	Nace_Q	✓	1	Human health and social work activities
18	Nace_R	✓	1	Arts, entertainment and recreation
19	Nace_S	✓	1	Other services activities
20	Nace_T	✓	0	Activities of households as employers; undifferentiated goods - and services - producing activities of households for own use
21	Nace_U	✓	1	Activities of extraterritorial organisations and bodies
		Total:	17	

A.11 Sectors feature list (information from the State Data Agency of Lithuania) (SEC)

#	Name	Y_1	Y_2	Y_3	No.	Description
1	SEC_Sales	✓	✓	✓	3	The sector sales, in thousands EUR
2	SEC_Sales_Change_X_year	✓	✓		2	(SEC_Sales - prev.SEC_Sales) / prev.SEC_Sales
3	SEC_GrossProfit	✓	✓	✓	3	The sectors gross profit, in thousands EUR.
4	SEC_GrossProfit_Change_X_year	✓	✓		2	(SEC_GrossProfit - prev.SEC_GrossProfit) / prev.SEC_GrossProfit
5	SEC_FixAss	✓	✓	✓	3	Gross investment in sectors tangible assets, in thousands EUR
6	SEC_FixAss_Change_X_year	✓	✓		2	(SEC_FixAss - prev.SEC_FixAss) / prev.SEC_FixAss
7	SEC_Num	✓	✓	✓	3	Number of non-financial enterprises in sector
8	SEC_Num_Change_X_year	✓	✓		2	(SEC_Num - prev.SEC_Num) / prev.SEC_Num
				Total:	20	

Statistics from analyzed enterprises - the same set of features as financial statement ratios, but are aggregated using mean metrics for NACE code.

A.12 Social insurance feature's list from a debt perspective (SSI_D)

#	Name	Y_1	Y_2	Y_3	M	DoE	No.	Description
1	SD15_month	✓	✓	✓	✓		36	The amount of an enterprise debt for State Social Insurance, at 15th day of the month
2	SD15_months3Change					✓	1	($SD15_{12}$- $SD15_9$)/ $SD15_9$, unless $SD15_9$=0, then =$SD15_{12}$
3	SD15_months6Change					✓	1	($SD15_{12} - SD15_6$)/ $SD15_6$, unless $SD15_6 = 0$, then =$SD15_{12}$
4	SD15_1_year_change					✓	1	(t_1 $SD15_{12}$ − t_2SD15_{12}) /t_2SD15_{12}, unless $t_2SD15_{12} = 0$, then = t_1 $SD15_{12}$
5	SD15_prev_year_change					✓	1	(t_2SD15_{12} − t_3SD15_{12})/t_3SD15_{12}, unless t_3 $SD15_{12} = 0$, then =t_2SD15_{12}
6	SD15_2_year_change					✓	1	(t_1SD15_{12} − t_3SD15_{12}) /t_3SD15_{12}, unless $t_3SD15_{12} = 0$, then = t_1SD15_{12}
7	SD15_X_year_Median	✓	✓	✓			3	The median of an enterprise debt amount, from January till December.
8	SD15_X_year_Max	✓	✓	✓			3	The maximum of an enterprise debt amount, from January till December.
9	SD14_month	✓	✓	✓	✓		36	The amount of an enterprise debt for State Social Insurance, at 14th day of the month
10	SD14_months3Change					✓	1	($SD14_{12}$- $SD14_9$)/ $SD14_9$, unless $SD14_9$=0, then =$SD14_{12}$
11	SD14_months6Change					✓	1	($SD14_{12} - SD14_6$)/ $SD14_6$, unless $SD14_6 = 0$, then =$SD14_{12}$
12	SD14_1_year_change					✓	1	(t_1 $SD14_{12}$ − t_2SD14_{12}) /t_2SD14_{12}, unless $t_2SD14_{12} = 0$, then = t_1 $SD14_{12}$
13	SD14_prev_year_change					✓	1	(t_2SD14_{12} − t_3SD14_{12})/t_3SD14_{12}, unless t_3 $SD14_{12} = 0$, then =t_2SD14_{12}
14	SD14_2_year_change					✓	1	(t_1SD14_{12} − t_3SD14_{12}) /t_3SD14_{12}, unless $t_3SD14_{12} = 0$, then = t_1SD14_{12}
15	SD14_X_year_Median	✓	✓	✓			3	The median of an enterprise debt amount, from January till December.
16	SD14_X_year_Max	✓	✓	✓			3	The maximum of an enterprise debt amount, from January till December.
17	SD15_Delay_month	✓	✓	✓	✓		36	The number of days of an enterprise debt for State Social Insurance
18	SD15_Delay_months3Change					✓	1	($SD15\_Delay_{12}$- $SD15\_Delay_9$)/ $SD15\_Delay_9$, unless $SD15\_Delay_9 = 0$, then =$SD15\_Delay_{12}$
19	SD15_Delay_months6Change					✓	1	($SD15\_Delay_{12} - SD15\_Delay_6$)/ $SD15\_Delay_6$, unless $SD15\_Delay_6 = 0$, then =$SD15\_Delay_{12}$
20	S15_Delay_1_year_change					✓	1	(t_1 $SD15\_Delay_{12}$ − $t_2SD15\_Delay_{12}$) /$t_2SD15\_Delay_{12}$, unless $t_2SD15\_Delay_{12} = 0$, then = t_1 $SD15\_Delay_{12}$
21	SD15_Delay_prev_year_change					✓	1	($t_2SD15\_Delay_{12}$ − $t_3SD15\_Delay_{12}$)/$t_3SD15\_Delay_{12}$, unless t_3 $SD15\_Delay_{12} = 0$, then =$t_2SD15\_Delay_{12}$
22	SD15_Delay_2_year_change					✓	1	($t_1SD15\_Delay_{12}$ − $t_3SD15\_Delay_{12}$) /$t_3SD15\_Delay_{12}$, unless $t_3SD15\_Delay_{12} = 0$, then = $t_1SD15\_Delay_{12}$
23	SD15_Delay_X_year_Median	✓	✓	✓			3	The median of several days of debt, from January till December.
24	SD15_Delay_X_year_Max	✓	✓	✓			3	The maximum of days of debt, from January till December.
25	SD15_Delay_X_year_Min	✓	✓	✓			3	The minimum of days of debt, from January till December.
26	SDR15_month	✓	✓	✓	✓		36	The rank of an enterprise debt for SSI, provided by UAB "Balfakta"
27	SDR15_months3Change					✓	1	($SDR15_{12}$- $SDR15_9$)/ $SDR15_9$, unless $SDR15_9 = 0$, then =$SDR15_{12}$
28	SDR15_months6Change					✓	1	($SDR15_{12} - SDR15_6$)/ $SDR15_6$, unless $SDR15_6 = 0$, then =$SDR15_{12}$

#	Name	Y_1	Y_2	Y_3	M	DoE	No.	Description
29	SDR15_1_year_change					✓	1	(t_1 $SDR15_{12}$ − t_2SDR15_{12}) /t_2SDR15_{12}, unless t_2SDR15_{12} = 0, then = t_1 $SDR15_{12}$
30	SDR15_prev_year_change					✓	1	(t_2SDR15_{12} − t_3SDR15_{12})/t_3SDR15_{12}, unless t_3 $SDR15_{12}$ = 0, then =t_2SDR15_{12}
31	SDR15_2_year_change					✓	1	(t_1SDR15_{12} − t_3SDR15_{12}) /t_3SDR15_{12}, unless t_3SDR15_{12} = 0, then = t_1SDR15_{12}
32	SDR15_X_year_Median	✓	✓	✓			3	The median of enterprise debt for SSI, from January till December.
33	SDR15_X_year_Max	✓	✓	✓			3	The maximum of enterprise debt for SSI, from January till December.
34	SDR15_X_year_Min	✓	✓	✓			3	The minimum of enterprise debt for SSI, from January till December.
35	SP_month	✓	✓	✓	✓		36	The difference between the debt amount and given provision amount from State Social Insurance for an enterprise, at 15th day of the month
36	SP_months3Change					✓	1	(SP_{12}- SP_9)/ SP_9, unless $SP_9 = 0$, then =SP_{12}
37	SP_months6Change					✓	1	($SP_{12} - SP_6$)/ SP_6, unless $SP_6 = 0$, then =SP_{12}
38	SP_1_year_change					✓	1	(t_1 SP_{12} − t_2SP_{12}) /t_2SP_{12}, unless $t_2SP_{12} = 0$, then = t_1 SP_{12}
39	SP_prev_year_change					✓	1	(t_2SP_{12} − t_3SP_{12})/t_3SP_{12}, unless t_3 $SP_{12} = 0$, then =t_2SP_{12}
40	SP_2_year_change					✓	1	(t_1SP_{12} − t_3SP_{12}) /t_3SP_{12}, unless $t_3SP_{12} = 0$, then = t_1SP_{12}
41	SP_X_year_Median	✓	✓	✓			3	The median of the difference between debt and given provision amounts from SSI for an enterprise, from January till December.
42	SP_X_year_Max	✓	✓	✓			3	The maximum of the difference between debt and given provision amounts from SSI for an enterprise, from January till December.
						Total:	241	

A.13 Social insurance feature list from employee's perspective (SSI_E)

#	Name	Y_1	Y_2	Y_3	M	DoE	No.	Description
1	Empl_month	✓	✓	✓	✓		36	The number of employees of last day of months.
2	SE_months3Change					✓	1	($Empl_{12}$- $Empl_9$)/ $Empl_9$, unless $Empl_9$=0, then =$Empl_{12}$
3	SE_months6Change					✓	1	($Empl_{12} - Empl_6$)/ $Empl_6$, unless $Empl_6 = 0$, then =$Empl_{12}$
4	SE_1_year_change					✓	1	(t_1 $Empl_{12}$- t_2Empl_{12}) /t_2Empl_{12}, unless $t_2Empl_{12} = 0$, then = t_1 $Empl_{12}$
5	SE_prev_year_change					✓	1	(t_2Empl_{12} - t_3Empl_{12})/t_3Empl_{12}, unless t_3 $Empl_{12} = 0$, then =t_2Empl_{12}
6	SE_2_year_change					✓	1	(t_1Empl_{12} - t_3Empl_{12}) /t_3Empl_{12}, unless $t_3Empl_{12} = 0$, then = t_1Empl_{12}
7	SE_X_year_Median	✓	✓	✓			3	The median of several employees, from January till December.
8	SE_X_year_Max	✓	✓	✓			3	The maximum of several employees, from January till December.
9	SE_X_year_Min	✓	✓	✓			3	The minimum of several employees, from January till December.
10	Empl_R_month	✓	✓	✓	✓		36	The rank of employees, provided by UAB "Balfakta"
11	SER_months3Change					✓	1	($Empl\_R_{12}$- $Empl\_R_9$)/ $Empl\_R_9$, unless $Empl\_R_9$=0, then =$Empl\_R_{12}$
12	SER_months6Change					✓	1	($Empl\_R_{12} - Empl\_R_6$)/ $Empl\_R_6$, unless $Empl\_R_6 = 0$, then =$Empl\_R_{12}$
13	SER_1_year_change					✓	1	(t_1 $Empl\_R_{12}$ – $t_2Empl\_R_{12}$) /$t_2Empl\_R_{12}$, unless $t_2Empl\_R_{12}$ = 0, then = t_1 $Empl\_R_{12}$
14	SER_prev_year_change					✓	1	($t_2Empl\_R_{12}$ - $t_3Empl\_R_{12}$)/$t_3Empl\_R_{12}$, unless t_3 $Empl\_R_{12}$ = 0, then =$t_2Empl\_R_{12}$
15	SER_2_year_change					✓	1	($t_1Empl\_R_{12}$ - $t_3Empl\_R_{12}$) /$t_3Empl\_R_{12}$, unless $t_3Empl\_R_{12}$=0, then = $t_1Empl\_R_{12}$
16	SER_X_year_Median	✓	✓	✓			3	The median of a rank of employees, from January till December.
17	SER_X_year_Max	✓	✓	✓			3	The maximum of a rank of employees, from January till December.
18	SER_X_year_Min	✓	✓	✓			3	The minimum of a rank of employees, from January till December.
19	SDU_month	✓	✓	✓	✓		36	The mean salary of employees, is provided if an enterprise has >5 employees
20	SDU_months3Change					✓	1	(SDU_{12}- SDU_9)/ SDU_9, unless SDU_9=0, then =SDU_{12}
21	SDU_months6Change					✓	1	($SDU_{12} - SDU_6$)/ SDU_6, unless $SDU_6 = 0$, then =SDU_{12}
22	SDU_1_year_change					✓	1	(t_1 $SDU_{12} - t_2SDU_{12}$)/t_2SDU_{12}, unless $t_2SDU_{12} = 0$, then = t_1 SDU_{12}
23	SDU_prev_year_change					✓	1	(t_2SDU_{12} – t_3SDU_{12})/t_3SDU_{12}, unless t_3 $SDU_{12} = 0$, then =t_2SDU_{12}
24	SDU_2_year_change					✓	1	(t_1SDU_{12} – t_3SDU_{12}) /t_3SDU_{12}, unless $t_3SDU_{12} = 0$, then = t_1SDU_{12}
25	SDU_X_year_Median	✓	✓	✓			3	The median of employee salaries in an enterprise, from January till December.
26	SDU_X_year_Max	✓	✓	✓			3	The maximum of employee salaries in an enterprise, from January till December.
27	SDU_X_year_Min	✓	✓	✓			3	The minimum of employee salaries in enterprise, from January till December.
						Total:	150	

A.14 State Tax Inspectorate feature's list (STI)

#	Name	Y_1	Y_2	Y_3	No.	Description
1	Tax_payment	✓	✓	✓	3	State tax inspection information about enterprises payed taxes (minus indicates debt to inspection)
2	Change_Tax_payment	✓	✓		2	(Tax_payment - prev. Tax_payment) / |prev. Tax_payment|
Total					5	

A.15 Other features list (Other)

#	Name	DoE	No.	Description
1	Address_change_Num	✓	1	The number of the enterprise register address change (since the creation of enterprise)
2	Time_after_address_change	✓	1	Quantity of days has passed since the last change. t - last change, where t - analyzed year on January 1
3	Age_month	✓	1	Age in months
4	InstFD_source_factor	✓	1	The Institution FD history of a source, i.e. if enterprise FD history had only from courts, then 1; if from courts and STI, then 2, etc.
5	LawS_bank_stat_Num	✓	1	The number of FD status change between good and FD in register center and lawsuits
6	RgFD_status_Num	✓	1	The number of FD status change between good and FD in register center
7	RgFD_stat_docs_Num	✓	1	The number of FD status change between good and FD in register center documents
8	STI_status_Num	✓	1	The number of FD status change between good and FD in register center and STI
9	Name_change_Num	✓	1	The number of the enterprise name change (since the creation of enterprise)
10	Time_after_name_change	✓	1	Quantity of days has passed since the last change. t - last change, where t - analyzed year on January 1
Total:			10	