

Discussion of Davydenko and Franks (2005)

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Roger M. Stein
Moody's Investors Service
New York

Set up

- Given very different bankruptcy codes (La Porta, *et al.* scores = {0 – 4}, expect structure of loans and resolution of defaults to differ across domicile
 - High levels of creditor protection in UK, quite low levels in France
- Test hypotheses using data from SME borrowers in portfolios of 10 European banks (3 French, 3 German and 4 UK)
- Examine mean recoveries conditioning for domicile, collateral and proceeding type as well as a number of firm specific and macro factors.
- This paper addresses the compliment to the problem investigated by Djankov, McLeish and Shleifer (2004).

Discussion

- Quick summary of summary of main results and some other LGD literature
- Some observations on data challenges
- A possible (naïve) explanation for the bankruptcy code - margin puzzle

Main findings

- Bankruptcy codes matter w.r.t. to quantities measured
 - Collateral levels and LGD appear related to codes
- Recovery still varies *ex post*
 - UK >> Germany > France
- Degree of influence of bankruptcy code on outcomes depends on type of bankruptcy procedures undertaken
 - informal procedures have similar outcomes in contrast to formal procedures that exhibit marked differences by bankruptcy code.
- Collateral largest determinant of recovery but value of collateral type in default varies by code
 - Colateralization vs. realization; rank of mean recovery value on collateral type by code varies
- Margins in loan contracts appear to be unrelated to *ex ante* expectations on probability and severity of default and codes (?)
 - France PD, LGD > Germ, UK but margins \cong UK and < Germ (!)

ADDITIONAL FINDINGS & SOME PRIOR EMPIRICAL WORK

	Support	Differ
Debt structure significant	Carty & Leiberan (1996); Van de Castle & Keisman (1999); Gupton (2000); Van de Castle (2000); Gupton (2000); Gupton & Stein (2002); Acharya, et al., (2004); Keisman, <i>et al.</i> (2004); Gupton & Stein (2005);	
Industry does not matter	Gupton, Gates and Carty (2000); Citron, <i>et al.</i> (2002);	Altman & Kishmore (1996); Hamilton, <i>et al.</i> (2000); Gupton & Stein (2002); Acharya, <i>et al.</i> , (2004); Emery (2004); Gupton & Stein (2005); Varma & Cantor (2005)
Firm specific factors affect recoveries	Unal, <i>et al.</i> (2001); Gupton and Stein (2002); Acharya et al., (2004); Gupton and Stein (2005); Varma and Cantor (2005); Keisman, et al. (2004)	Citron et al (2002) [size only]
Macro factors do <u>not</u> affect recoveries	Hurt & Felsovalyi (1998); Emery (2004); Keisman, <i>et al.</i> (2004) [MODERATELY]	Hamilton, <i>et al.</i> (2000); Fridson (2000); Frye(2000); Altman, <i>et al.</i> (2001); Unal, <i>et al.</i> (2001); Gupton & Stein (2002); Acharya, <i>et al.</i> , (2004); Emery(2004); Gupton & Stein(2005);Varma & Cantor(2005)

Do the significant data challenges produce artifacts in the analysis?

- SME bank data quite noisy
- Between-group firm variability high: size, credit quality, etc.
- Bank lending relationships vary
 - UK: Primary bank 90% of the time → Higher recoveries
 - French: Primary bank 60% of the time → Lower recoveries
 - This might also confound size measure (tot. debt exposure to bank)
 - Is this related to individual banks or endemic to domicile?
- Collateral valuation approaches differ among banks in terms of timing and conservatism
 - France: Less recent valuations → Harder to value assets (e.g., Real Estate) may be less significant in regression due to interpretation.
- German data contains pre-and post-introduction of new code periods.
- Distribution of dependent variable inconvenient suggesting a GLM or GAM formulation or a transformation
- *A possible explanation for the interest margin finding...*

A possible (naïve) explanation for the bankruptcy code-margin puzzle

Table II. Sample size by year of default

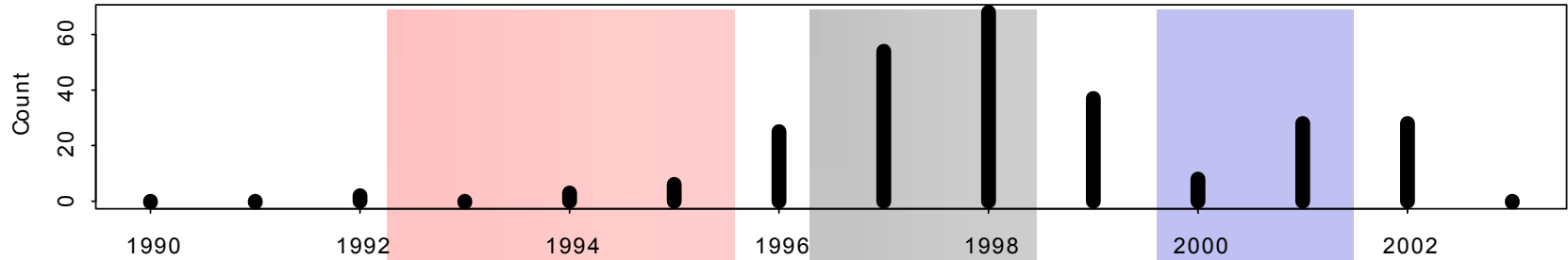
The table reports the number of firms in the sample in each of the the three countries by year of default. The sample consists of defaulted firms with loan exposure at default to the participating bank greater than €100K and with annual turnover less than €75 Mil. The default event is defined according to Basel II criteria as described in Section III.

Year	UK	France	Germany	Total
1984-1992	1	64	2	67
1993	0	94	0	94
1994	4	88	3	95
1995	2	79	6	87
1996	18	80	25	123
1997	80	52	54	186
1998	102	31	68	201
1999	129	18	37	184
2000	332	29	8	369
2001	410	27	28	465
2002-03	339	21	28	388
N/A	1	3	17	21
Total	1,418	586	321	2,280

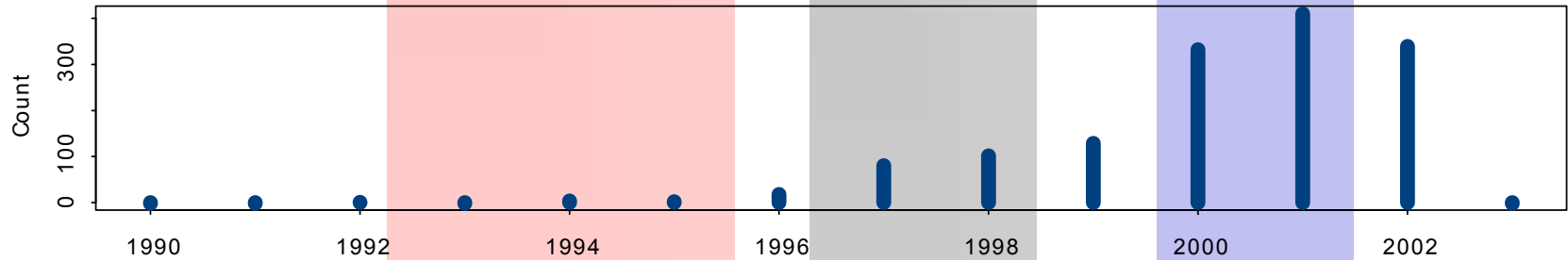
The time distribution of defaults is heterogeneous

(colored bands indicate 50% modal range)

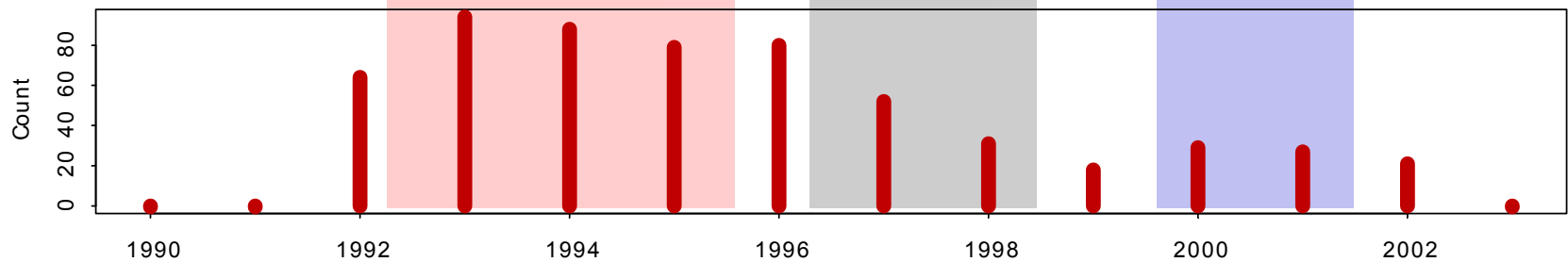
German Loans



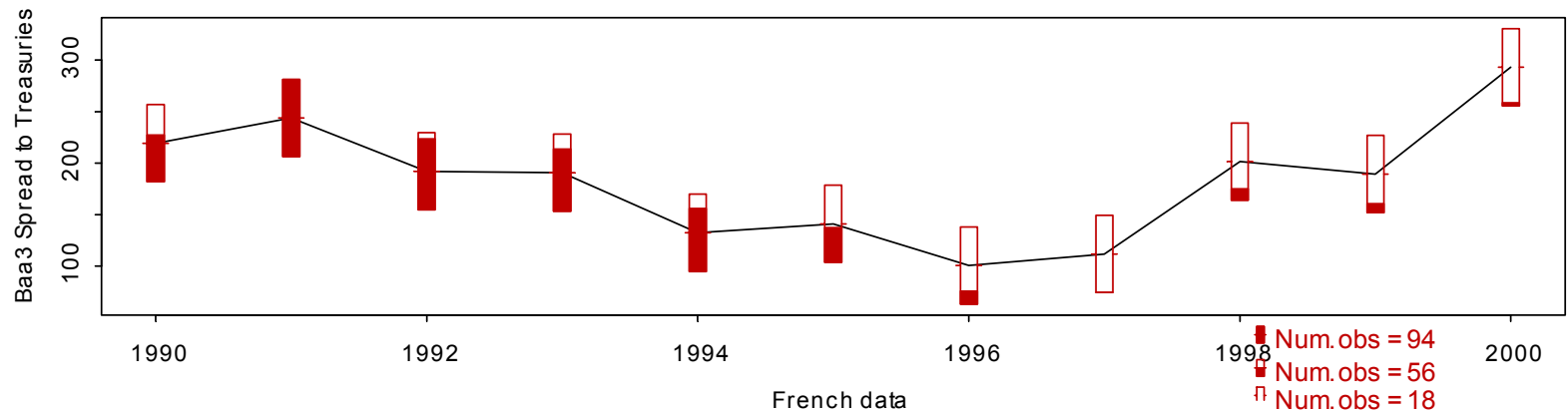
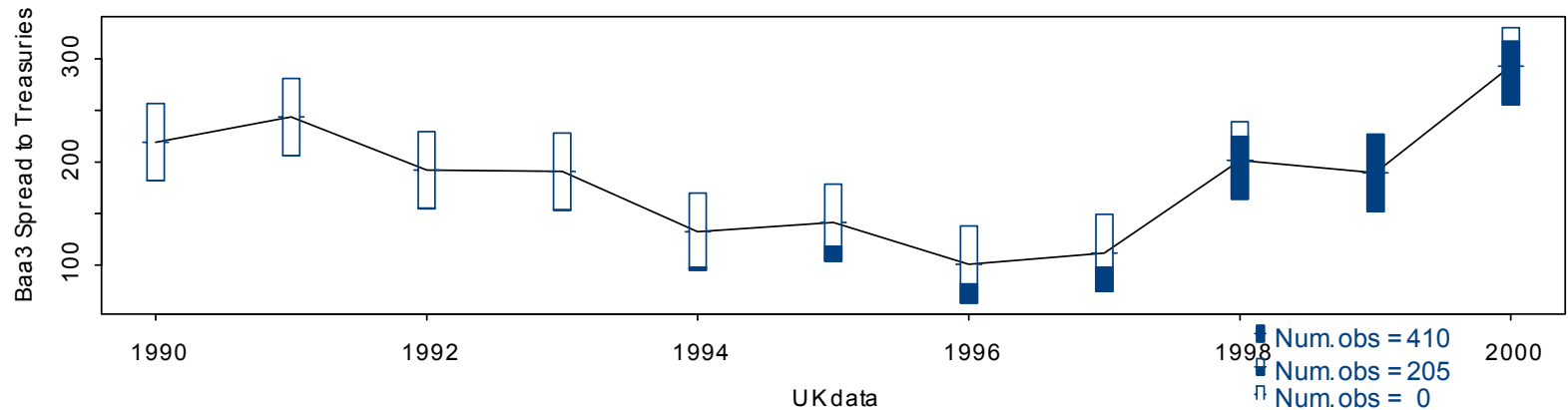
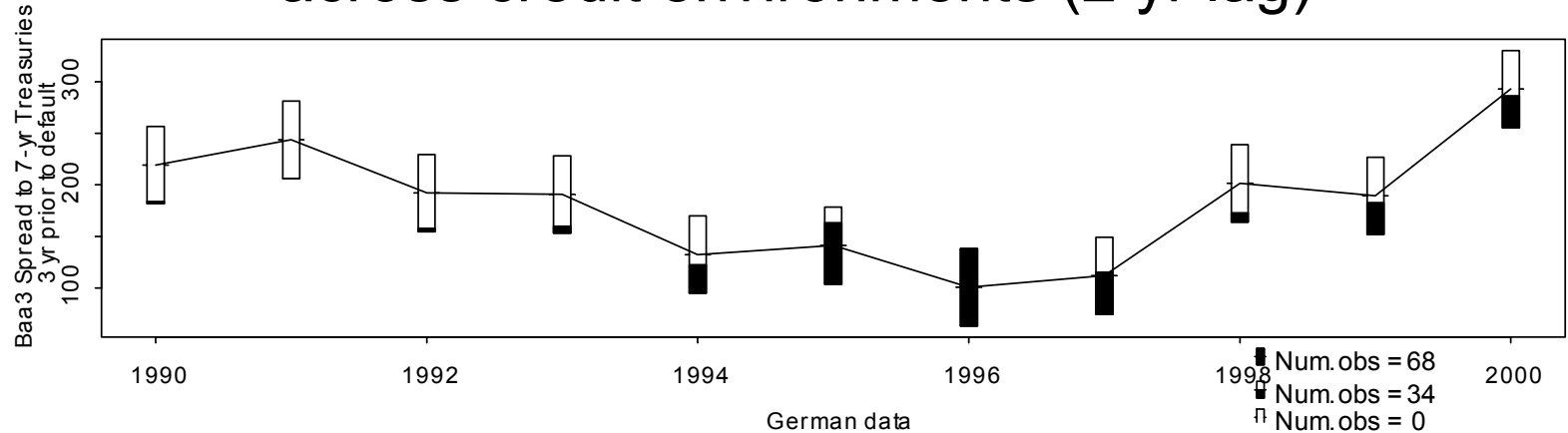
UK Loans



French Loans



The time distribution of defaults appears heterogeneous across credit environments (2 yr lag)



A naïve pseudo-data generator using only loan year & credit spreads

- NB: Hopelessly flawed experiment: assign each fake “loan” the prevailing global spread at est. time of origination
- Basic record structure:

German dummy *UK dummy* *French Dummy* *Generic credit spread_t*

For each country, c , and each year, t

- create $n_{c,t}$ records ($n_{c,t}$ from D & F, 2005, Table II)
 - set country dummy to 1
 - set other dummies to 0
 - set $margin_t$ to prevailing **generic** market (not loan or country specific) spread (e.g., 3M CP spread over 3M TBill at time t)
 - For long-term rates, lag $n_{c,t}$
- e.g.: Create 25 “German” records for 1996 using prevailing 3M CP over 3M TBill rate in 1996, each with the (identical) form
 $1, 0, 0, 46bps$
- Estimate model of form
 $margin = \alpha + \beta_1 UK + \beta_2 France$, where α represents the German mgn.

Significant effects appear with no loan data (!) based only on credit spread environment at approximate time of loan issuance

Dummies vs. 3M Financial CP spread to 3M T-Bills

	Value	Std. Error	t value	Pr(> t)
(Intercept)	47.3205	1.3553	34.9140	0.0000
UK	-15.4595	1.4740	-10.4880	0.0000
France	-10.5555	1.6288	-6.4805	0.0000

Multiple R-Squared: 4.9%

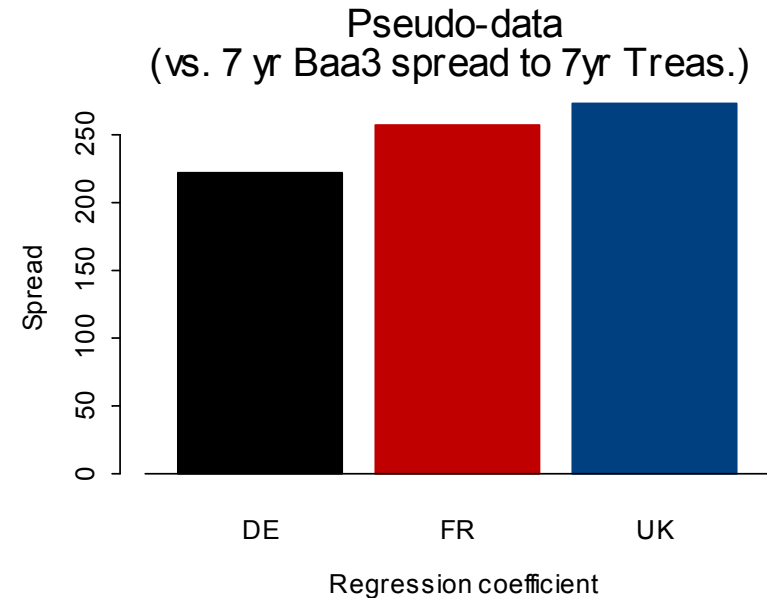
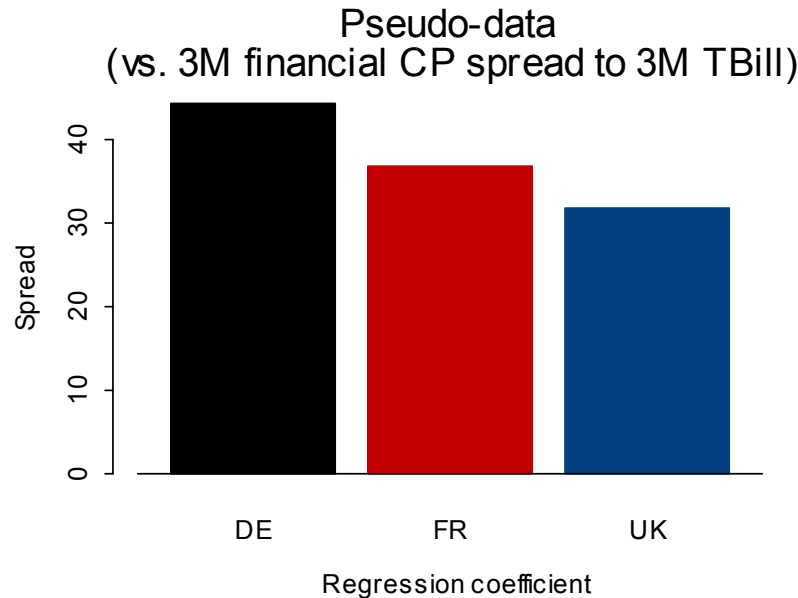
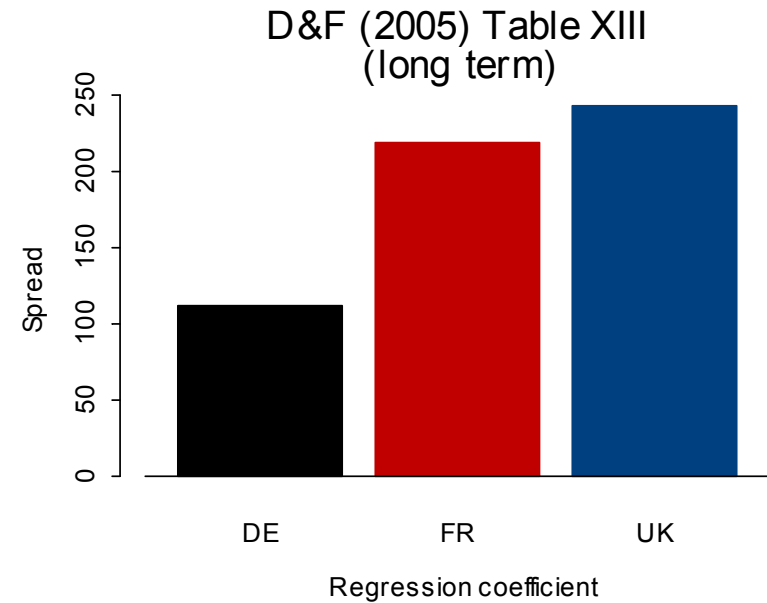
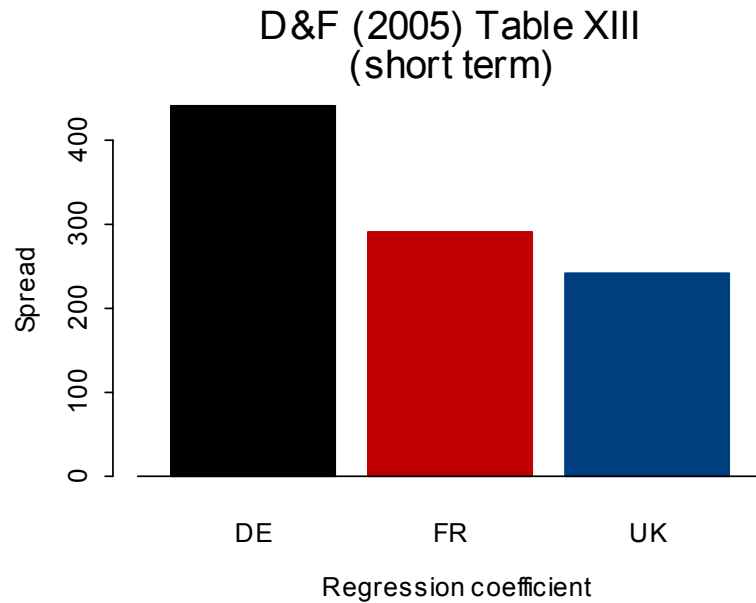
Dummies vs. 7Y Baa3 spread to 7Y Treasury (2 yr lag)

	Value	Std. Error	t value	Pr(> t)
(Intercept)	150.9357	2.5596	58.9681	0.0000
UK	49.2009	2.7826	17.6819	0.0000
France	34.2974	3.1006	11.0617	0.0000

Multiple R-Squared: 6.8%

(NB: Median Adj R² D&F 2005, Table XII = 7.3%)

Significant “margin effects” appear with no loan data based only on credit spread environment at approximate time of issuance



A different (naïve) explanation for the bankruptcy code-margin puzzle

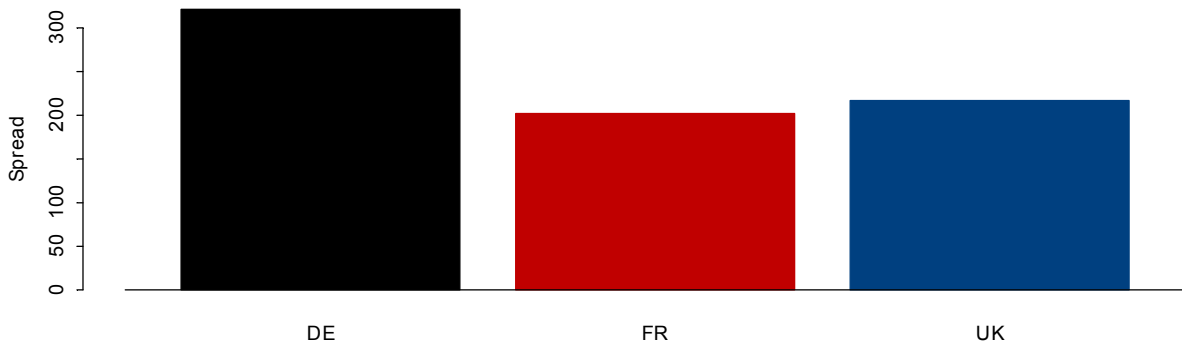
Table IV. Firm characteristics

The table reports sample statistics for the firms in the sample. *Turnover* is sales turnover before default. *Leverage* is the ratio of total debt to the sum of total debt and shareholders equity. *Current ratio* is the ratio of current assets to current liabilities. *Age* is the age of the company from incorporation to default. *Years with the bank* is the age of the relationship with the participating bank at default. *Formal bankruptcy* and *Piecemeal liquidation* are the proportions of defaulted firms in each country which were reorganized under formal bankruptcy and liquidated piecemeal (in or out of bankruptcy), respectively. *Turnover*, *Leverage* and *Current ratio* are as of the date of the last pre-default audited accounts dated no more than 12 months before default, if available, or management accounts otherwise. The sample consists of firms with loan exposure at default to the participating bank greater than €100K and with annual turnover less than €75 Mil., that defaulted on their bank debt according to Basel II criteria.

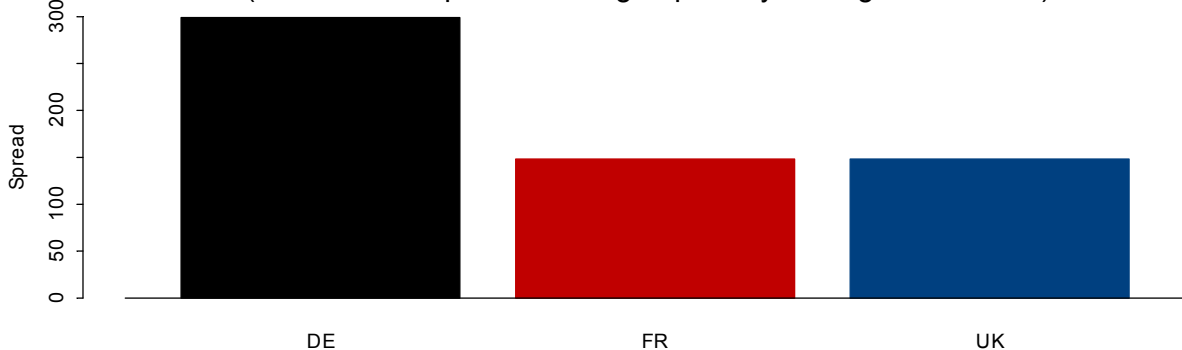
		Turnover (€ Mil.)	Leverage	Current ratio	Age (years)	Years with the bank	Formal bankruptcy	Piecemeal liquidation
UK	Mean	17.37	0.61	1.05	14.0	7.3	75.4%	42.9%
	Median	5.460	0.66	0.85	7.3	4.3		
	St.Dev.	34.27	0.74	1.53	16.8	8.0		
	N	195	209	226	915	955	863	266
France	Mean	18.56	0.65	1.35	18.6	9.3	78.0%	62.0%
	Median	5.738	0.63	1.01	8.6	4.9		
	St.Dev.	48.95	0.36	1.29	23.9	14.2		
	N	209	57	60	218	504	533	347
Germany	Mean	23.81	0.87	N/A	24.8	7.7	86.9%	56.9%
	Median	11.72	0.79		15.4	3.8		
	St.Dev.	39.39	0.94		26.8	13.2		
	N	67	60		80	256	267	51

Credit quality might also help explain spread findings

D&F (2005) median spread: Table V



7 yr rating spread to 7yr Treasury
(median 1997 spread of rating implied by leverage in Table IV)



- Calculate median spread for each Moody's rating category
- Calculate average leverage ratio for each Moody's rating category
- Using leverage in D&F Table IV, map each country sample to rating category
- Compare spreads for implied rating by country.
- Caveats: US leverage and ratings data, 1997

Other co-factors of possible interest

- Year
- Bank indicator (currently being researched by D&F)
- Indicator of whether bank is main bank; or number of other banks lending
- Indicator for pre- and post- introduction of new codes
- Prevailing credit spreads at time of issuance*
- Leverage or EDF* as indicator of pre-default firm-specific credit quality (similar to Gupton and Stein, 2002, 2005)
- Aggregate credit index by region and industry (e.g., Rating, DD or EDF)* (Gupton and Stein 2002, 2005; Varma and Cantor, 2005)
- Time since last collateral valuation*
- Level of contemporaneous recoveries in country (and industry) (Gutpon and Stein 2002, 2005)
- Turnover or TA as measure of size rather than loan amt.

*not indicated as present in the current data set but potentially obtainable

Summary

- Interesting exploration of implications of bankruptcy code on both recovery and loan structuring.
- Topic is exciting and of great import, particularly w.r.t. Basle II formulations in individual countries
- Useful framing of this problem
- Findings support influence of codes on LGD and loan structure.
- Data issues may introduce artifacts in some cases; a more highly structured design might control for some of these.