

A Practical Model Integrating Market and Credit Risk

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- Breuer T., M. Jandacka, K. Rheinberger, M. Summer: Does Adding Up of Economic Capital for Market- and Credit Risk amount to Conservative Risk Assessment?, Journal of Banking and Finance (forthcoming 2009)



Goals

Compare

- home vs. foreign currency loans
- continuous repayment vs. bullet with repayment vehicle

from the point of view

- of the bank
- of the borrower



Findings: Which loan type is cheapest for the borrower?

Total payments over full loan period (if no default):

	EUR annuity	FX annuity	EUR RPV equity	FX RPV equity	EUR RPV bond	FX RPV bond
mean	101 683	98 517	41 923	35 829	89 070	84 623
VaR(10%)	106 809	110 441	110 437	113 167	110 809	113 257
VaR(1%)	116 656	124 694	146 427	163 744	150 629	157 454

FX vs home currency loan

- In the mean, FX loans are cheaper than EUR loans.
- Risk of high payments is worse for FX loans than for EUR loans.

Regular annuity vs bullet loan with RPV

- In the mean, equity RPV gives by far cheapest loans, annuity gives most expensive loans.
- Risk of high payments is more dangerous for bullet with RPV, lower for loans with regular annuities.

RPV: repayment vehicle



Findings: How often borrowers get into payment difficulty?

Percentage of loans with payment difficulty
 (borrower cannot pay within 90 days grace)
 (first year PD = 2% for EUR loan with annuities)

year	EUR annuity	FX annuity	EUR RPV equity	FX RPV equity	EUR RPV bond	FX RPV bond
1	1.99	0.17	0.89	0.01	1.65	0.02
2	3.02	1.60	0.94	0.24	1.26	0.33
3	2.71	2.81	1.01	0.66	1.21	0.79
4	2.41	3.11	1.16	1.03	1.31	1.19
5	2.09	2.94	1.21	1.29	1.33	1.44
6	1.80	2.61	1.21	1.39	1.29	1.53
7	1.53	2.28	1.14	1.42	1.20	1.54
8	1.31	1.98	1.05	1.38	1.10	1.48
9	1.13	1.74	0.97	1.31	1.00	1.39
10	1.28	2.00	18.91	22.32	28.76	37.58
total defaults	19.28	21.25	28.50	31.06	40.10	47.30

- During loan period, higher PDs of loans with annuities.
- At maturity, wave of payment difficulties for RPV loans.
- In total, more payment difficulties for RPV loans.

