Bank Risk and Bank Rents:The Franchise Value Hypothesis Reconsidered

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1. Synopsis

1. In a large sample of publicly quoted banks in the US, Europe, and Asia during 1985-2017, higher values of Q predict *higher* bank risk of insolvency when Q exceeds 1 and franchise value is priced.
2. The franchise value hypothesis (FVH) (higher franchise value due to rents, higher bank risk) is rejected in our sample.
3. A decomposition of rents into bank efficiency rents, loan and deposit pricing power rents, and rents due to government guarantees shows that an increase of any of these rents predicts higher franchise values.
4. Two complementary explanations of the rejection of the FVH: one based on a calibration of two standard financial models of the banking firm, the other based on a simple industry model with endogenous entry

2. Evidence

- Our data: Panel of publicly traded banks in 25 advanced economies for the period 1985-2017. The sample is composed of 1,136 publicly quoted banks, including 629 U.S. Bank Holding Companies (BHCs), 310 European banks and 197 Asian banks.
- Franchise value measured by Tobin Q
- Measure of bank risk of insolvency: Distance to Insolvency (DI) derived by Atkeson, Eisfeldt, and Weill (2018) based on Leland (1994) structural model of credit risk.
- Evidence of non-linearity of the predictive relationship between Tobin Q and DI.
- We estimate a log-linear version of the regression kink model with an unknown threshold introduced by Hansen (2017):

$$\ln DI_{it} = a_0 + \alpha_1(\ln Q_{i,t-1} - \ln Q^*)_- + \alpha_2(\ln Q_{i,t-1} - \ln Q^*)_+ + controls + \epsilon_{it}$$

- $(\ln Q_{i,t-1} - \ln Q^*)_-$ and $(\ln Q_{i,t-1} - \ln Q^*)_+$ are the negative and positive parts of the difference $\ln Q_{i,t-1} - \ln Q^*$ respectively,
- $\ln Q^*$ is the estimated threshold of $\ln Q$.

3. Results:

1. $Q^* \approx 1$
2. Higher Q predicts higher bank risk
3. Estimates of efficiency rents, pricing power rents, and government subsidy rents and find all of them predict higher Q

Table 1: **DI regressions**

Variable definitions: lDI - log of the inverse of the standard deviations of equity returns (suffixes eu and a denote the sample of European and Asian banks, respectively); ltobinq - log of Tobin Q defined as the sum of market value of equity and total liabilities over total assets; (lnQ-lnQ*)_(-) - the difference between ltobinq and the optimal threshold when ltobinq is lower than the threshold; (lnQ-lnQ*)_(+) - the difference between ltobinq and the optimal threshold when ltobinq is greater than the threshold; logta - log of total assets in USD; lla - log of total loans to total assets; ldl - log of total deposits to total liabilities; llev - log of total liabilities over total shareholder equity. L. denotes a one-period lag. *** denotes 1% significance level, ** denotes 5% significance level, and * denotes 10% significance level.

	Q*=1.01			Q*=1.00			Q*=1.01		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	lDI	**lDI**		**lDIeu**	**lDIeu**		**lDIa**	**lDIa**	
L.ltobinq	**0.5713*** **		**-0.3802*** **	**0.0700**		**-0.7087*** **	**0.6011*** **		**0.3988**
	(5.7239)		**(-3.2330)**	**(0.5538)**		**(-4.0607)**	**(2.8888)**		**(1.4742)**
L.(lnQ-lnQ*)_(-)		**5.5092*** **			**1.5679*** **			**3.2535*** **	
		(15.9453)			**(3.9935)**			**(6.1405)**	
L.(lnQ-lnQ*)_(+)		**-0.5803*** **			**-0.3443** **			**-0.5741*** **	
		(-5.5566)			**(-2.2553)**			**(-2.5822)**	
L.logta	0.0515***	0.0494***	0.0515***	0.0038	0.0036	-0.0056	-0.0193***	-0.0262***	-0.0676***
	(16.0109)	(15.5523)	(11.5849)	(1.5510)	(1.4673)	(-1.2511)	(-3.8568)	(-5.1405)	(-7.8388)
L.lla	-0.0386**	-0.0327*	0.0055	0.0568***	0.0532***	0.1061***	-0.0146	-0.0448*	0.0355
	(-2.1720)	(-1.8503)	(0.2474)	(3.3804)	(3.1649)	(3.6423)	(-0.5628)	(-1.7919)	(1.2549)
L.ldl	0.0600**	0.0414	0.1000**	0.0270***	0.0278***	0.0391***	0.2065***	0.1825***	0.2202***
	(1.9724)	(1.3260)	(2.3557)	(2.6768)	(2.7609)	(2.9610)	(7.4632)	(6.7233)	(5.7773)
L.llev	-0.3251***	-0.3721***	-0.1410***	-0.0229**	-0.0353***	-0.0290*	-0.0467***	-0.0612***	-0.0081
	(-20.9958)	(-24.3342)	(-5.8427)	(-2.2479)	(-3.4698)	(-1.7403)	(-3.6912)	(-4.6584)	(-0.4283)
Constant	-1.5378***	-1.2538***	-2.5492***	-1.8724***	-1.8022***	-1.8896***	-2.0138***	-1.5834***	-1.5320***
	(-8.1154)	(-6.3750)	(-8.9703)	(-20.6017)	(-19.6509)	(-12.9852)	(-13.3340)	(-9.6455)	(-6.6853)
Observations	9,080	9,080	4,138	4,248	4,248	1,546	3,278	3,278	1,299
R-squared	0.4214	0.4484	0.3601	0.5537	0.5594	0.0336	0.4748	0.4875	0.1377
Number of banks	629	629	458	310	310	394	197	197	138
Sample	**US**	**US**	**US**	**Europe**	**Europe**	**Europe**	**Asia**	**Asia**	**Asia**

4. Explaining the evidence

Two Merton models and a simple industry model with endogenous entry

1. Merton's (1977) model as modified by Marcus (1984)
2. Merton's (1978) dynamic model of a bank exposed to random costly audits

Results: The FVH would hold only under unrealistically high values of rents.

- Industry model: a bank faces a trade-off between allocating effort to rents or to improvements in risk management. Banks compete a la Cournot and entry/exit is endogenous.

Results: In a stationary long-run equilibrium, an increase in rents or a decline in competition (**higher** pricing power rents) result in higher bank risk