Market Discipline Working For and Against Financial Stability: The Two Faces of Equity Capital

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*The views expressed here do not necessarily represent those of the Federal Reserve Bank of Cleveland or the Federal Reserve System.

Does the capital market *discipline* bank risk-taking?

- “Except where market discipline is undermined by moral hazard, for example, because of federal guarantees of private debt, private regulation generally has proved far better at constraining excessive risk-taking than has government regulation.” – Alan Greenspan, 2005

Does the capital market *encourage* bank risk-taking?

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- “...those of us who have looked to the self-interest of lending institutions to protect shareholders’ equity (myself especially) are in a state of shocked disbelief.” – Alan Greenspan, 2008

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  - **High-risk capital strategy** to exploit safety net and “reach for yield”
    - Lower valued investment opportunities
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    - Option value of explicit/implicit deposit insurance

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- High-risk capital strategy – low capital ratio – to exploit safety net and “reach for yield”
  - **Market Discipline works against financial stability.**

Incentives to Reach for Yield

- Incentive to take risk
  - Keeley (1990): Links increased competition to the incentive to increase leverage
  - Grossman (1992): Links deposit insurance . . .

Evidence on Risk-Taking Incentives

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  - Keeley (1990): Links increased competition to the incentive to increase leverage
  - Grossman (1992): Links deposit insurance . . .
- Papers that find evidence of dichotomous capital strategies
  - McConnell and Servaes (1995), Hughes, Lang, Moon, and Pagano (1997), DeJonghe and Vander Vennet (2005), Calomiris and Nissim (2007), Hughes, Mester, Moon (2016)

Dichotomous Risk-Taking Incentives

- **Data**
  - **2013 data** on 167 publicly traded BHCs
  - **2007 data** on 142 publicly traded BHCs
- **Performance Measurement**
  - **Market Value of Assets**
  - **Market Value Inefficiency**
    - Best practice market value of assets given book-value investment in assets
    - Difference between best-practice value and achieved market value = market-value shortfall
    - Inefficiency ratio = value shortfall / best-practice value

Estimating Highest (Best-Practice) Potential Value

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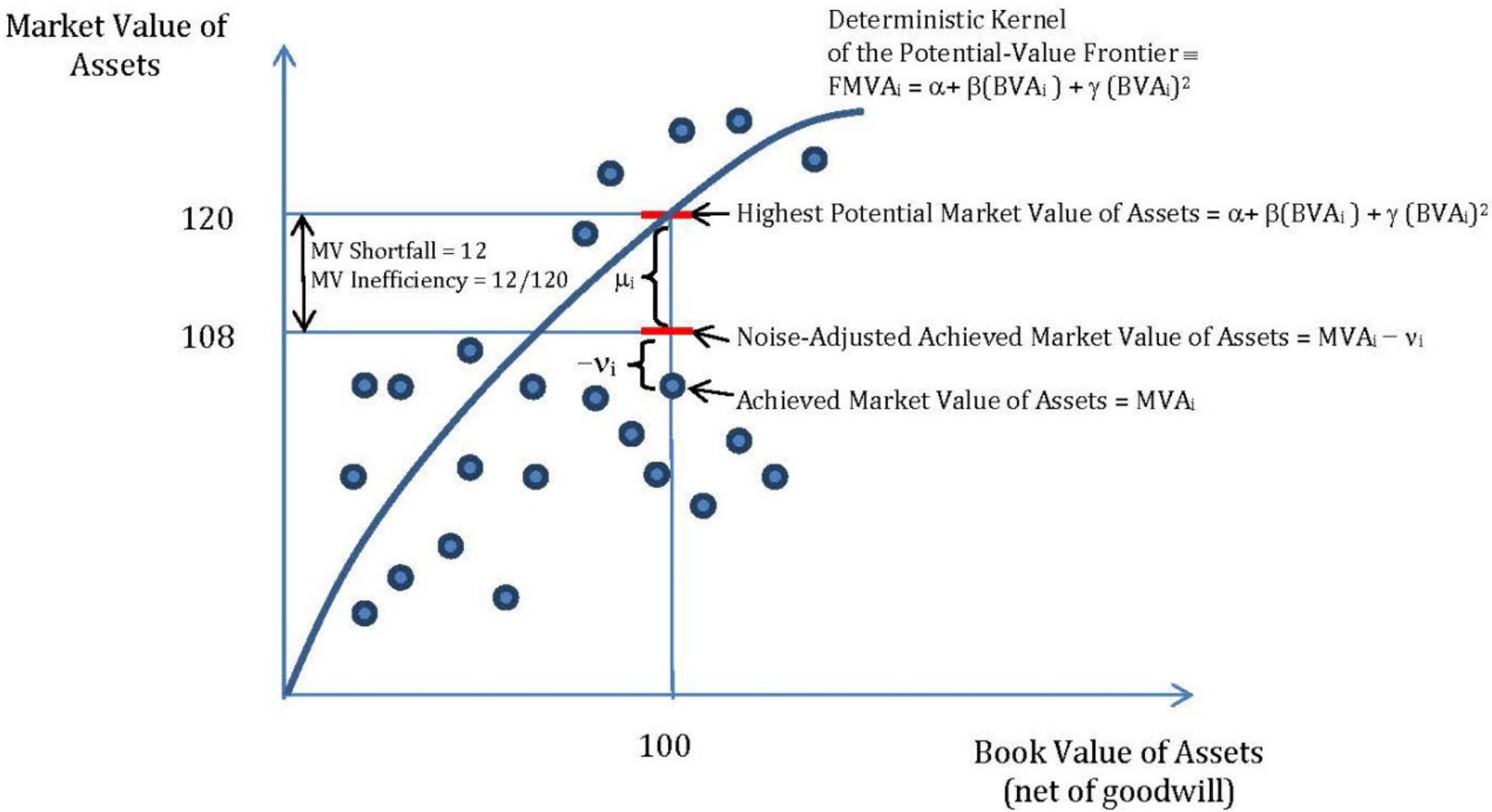
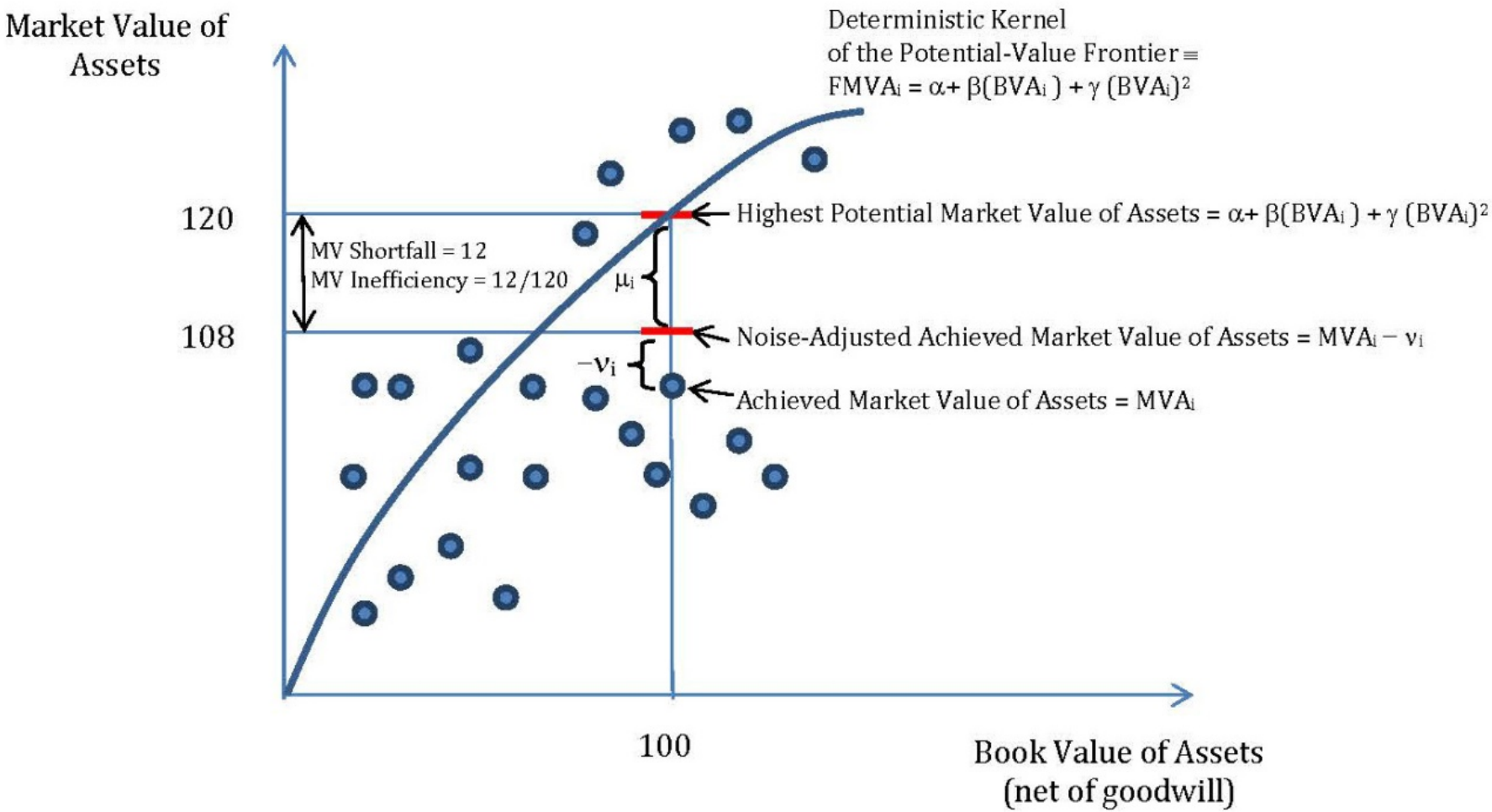
Stochastic Frontier: Highest Market Value to Book-Value Investment



MV Inefficiency = 12/120 = 0.10
Q Ratio = 108/100 = 1.08



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- Value of assets in a competitive auction

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- Highest potential value of assets <u>in markets in which a bank operates</u> given
  - book-value investment in assets
  - GDP growth rate
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- Highest potential value of assets over <u>all relevant banking markets</u> given
  - book-value investment in assets
  - penalizes suboptimal locations

Investment Strategies and Financial Performance

- $P_i = \boldsymbol{a} + \mathbf{X}^2 + \mu_i$
  - where P_i = performance measured by
    - *ln* market value of assets
    - market-value inefficiency ratio

Investment Strategies and Financial Performance

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    - loan quality
    - asset and liability composition
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  - **132 of 167** BHCs improve financial performance by **increasing** capital ratio (97 statistically significant)

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	Mean	Mean	*P*	Mean	Mean	*P*
• Performance/ • Capital Ratio	0.397	-0.6782	<0.0001	-0.453	0.876	<0.0001
Book Value Assets (1,000s)	3,446,971	791,823,540	0.0018	5,050,993	614,164,373	0.0018
Investment Opportunity Ratio	1.3326	1.125	<0.0001	1.293	1.145	<0.0001
Tobin's q Ratio	1.0751	1.037	0.0012	1.078	1.041	0.0002
Market-Value Inefficiency Ratio	0.233	0.054	<0.0001	0.195	0.058	<0.0001
Book-Value Equity/ Total Assets	0.110	0.109	0.9039	0.109	0.109	0.8453

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Investment Opportunity Ratio	**1.3326**	1.125	<0.0001	**1.293**	1.145	<0.0001
Tobin's q Ratio	1.0751	1.037	0.0012	1.078	1.041	0.0002
Market-Value Inefficiency Ratio	0.233	0.054	<0.0001	0.195	0.058	<0.0001
Book-Value Equity/ Total Assets	0.110	0.109	0.9039	0.109	0.109	0.8453

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  - 97 out of 167 banks in 2013

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- Higher investment opportunity ratio

Capital Market Incentives to Decrease the Capital Ratio

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  - 15 out of 21 in 2013 (15/167)

Capital Market Incentives to Decrease the Capital Ratio

- Large, systemically important banks
  - 15 out of 21 in 2013
  - 17 out of 17 in 2007

Capital Market Incentives to Decrease the Capital Ratio

- Large, systemically important banks
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  - 17 out of 17 in 2007
- Lower investment opportunity ratio

Agency Incentives

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- Cheng, Hong, and Schneinkman (2015)
  - High risk and high residual executive compensation related to institutional ownership.

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  - "...those of us who have looked to the self-interest of lending institutions to protect shareholders' equity (myself especially) are in a state of shocked disbelief." – Alan Greenspan, 2008

Conclusions

- Evidence of two faces of equity investment
- Need for regulatory capital requirements
  - Basel III
  - TLAC
  - CoCos
    - Charles Calomiris and Richard J. Herring (2013), “How to Design a Contingent Convertible Debt Requirement That Helps Solve Our Too-Big-to-Fail Problem,” *Journal of Applied Corporate Finance* 25, 21-44