Buyout Financing: The Changing Role of Banks in Deal Financing

Federal Reserve Bank of San Francisco
Symposium on Private Equity

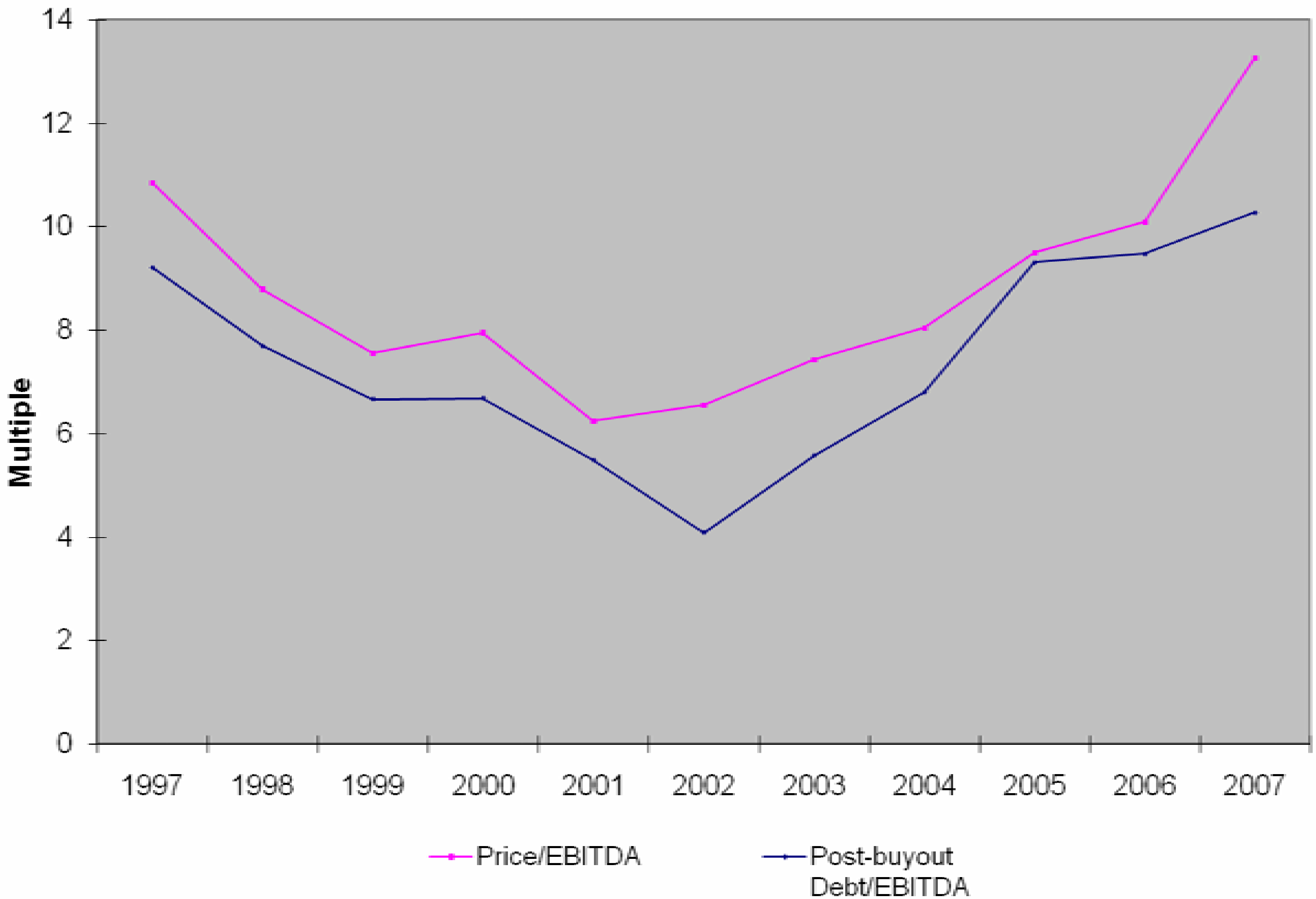
October 20, 2007

Was The Buyout Market in 2006/7 Overheated Like the late 1980's?

- "It was so much easier to go to the public markets. It was cheaper, and there were very few covenants…It was fantasy….Smart money was able to raise dumb money from passive investors—money that would accept high risks for skimpy rewards". *Forbes,* October 1,1990

- Kaplan and Stein (QJE 1993): Ex-ante differences in the pricing and structure of buyouts in the late 1980's led to disappointing investor returns and increased costs of financial distress.
  – Higher buyout prices to cash flows.
  – Higher debt to cash flows.
  – Less senior secured bank debt.
  – More high yield debt.
  – More deferred interest securities.

Trends in Buyout Pricing and Leverage



Is the Market Overheated Like it Was in the Late 1980's?

- In the first half of 2007, 57% of "bank" loans were "covenant lite" and 64% were term B (held by institutional investors).

- "Standard & Poor's believes in the next credit downturn, complications in the restructuring process due to rising complexity in borrower capital structures and new entrants in the levered loan market (e.g. hedge funds, structured vehicles et al.) could affect recover prospects. Covenant lite structures could delay eventual default and allow the value securing a loan to slip". Standard &Poor's "The leveraging of America: Covenant Lite Loan Structures Diminish Recovery Prospects" July 18 2007

Questions Addressed

- What determines the amount and the structure of debt financing in buyouts?
- Does the trend towards fund led buyouts mean that less bank monitoring and fewer covenants are needed?

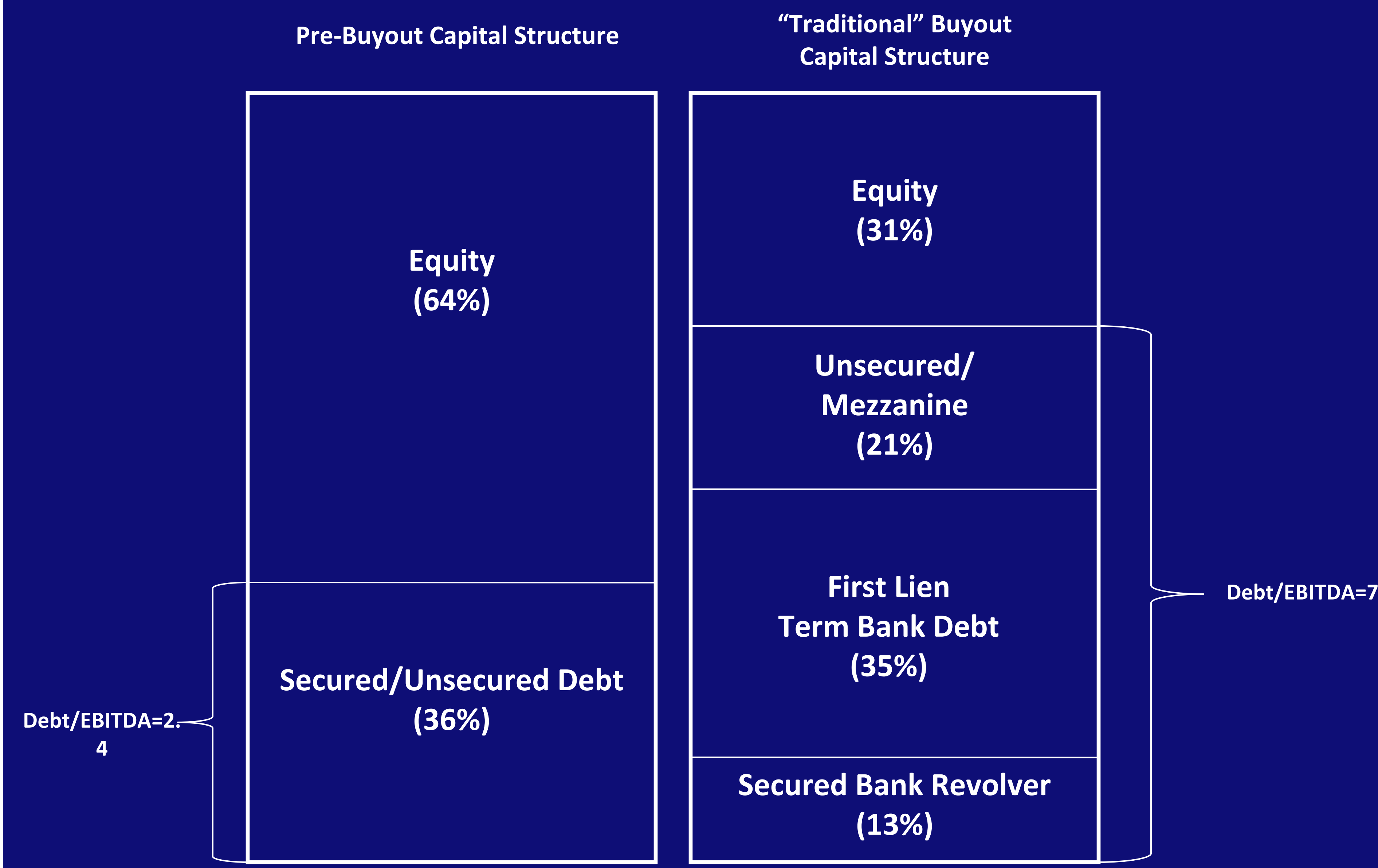
Summary of Findings

- Buyout leverage is driven primarily by credit risk spreads and projected operating changes. Leverage drives deal values.
- Leverage and deal values have increased since 2003 but are not a lot higher than the 1997-2000 period.
- Deal structure has changed.
  - Less covenant heavy bank debt.
  - More covenant “lite” loans.
  - Anyone can belong to a syndicate.
  - More second lien and sub-debt.
- GP’s reputation is significantly related to leverage and deal structure.

Summary Statistics for Large Public Buyouts 1997-2007

Year	Number of LBOs	Median Deal Value (Million $)	Number of private equity led LBOs	Number of management led LBOs
1997	9	407.0	7	2
1998	14	198.9	7	7
1999	17	113.2	8	8
2000	27	329.0	17	9
2001	12	230.4	2	9
2002	5	93.9	3	2
2003	12	235.5	2	9
2004	9	752.0	8	1
2005	20	773.3	18	1
2006	25	1108.5	22	3
2007	31	1598.3	25	6
Total	181	408.8	119	57

Buyout Financing (Pre-2005)



What Determines Public Buyout Leverage?

Traditional argument: Corporate governance problems at the target firm and agency costs of public equity (Mike Jensen). Candidates for LBOs have free cash flows or operational inefficiencies

- Incentive effects of debt.
  - Debt forces disgorgement of free cash flows.
  - Debt creates incentives to make operating changes.
  - Significant covenant heavy bank debt leads to banker oversight and early intervention, lowering financial distress costs.
- Incentive effects of private equity.
  - Concentrated equity ownership that reinforces the incentive effects of debt.
  - Limited fund life provides a clear exit strategy.

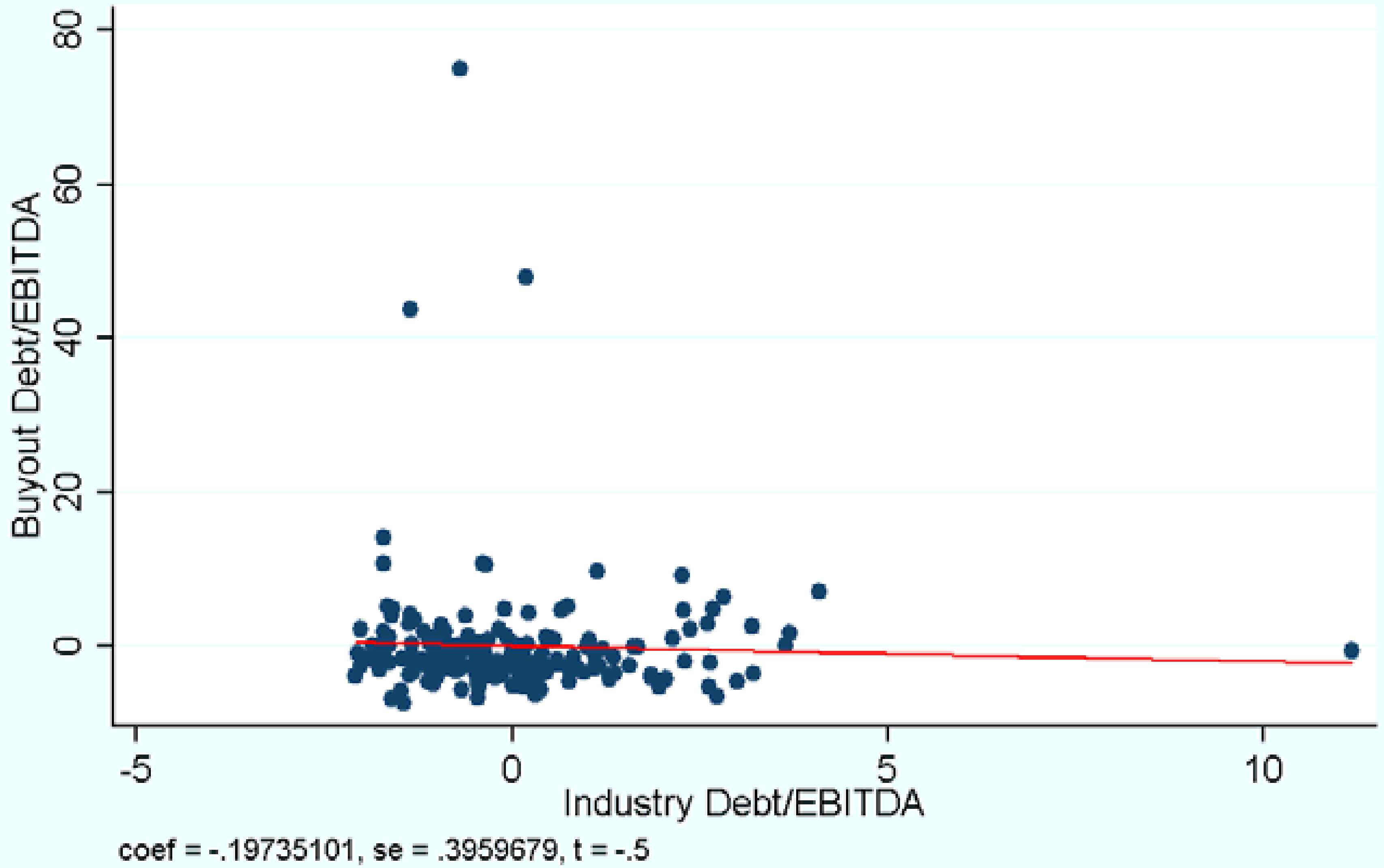
What Determines Buyout Leverage?

- Governance issues at the ***fund*** level (Axelson, Stromberg, Weisbach).
  - The GP's carried interest has option like pay-off characteristics. This creates incentives for debt financing and risk shifting.
  - The typical fund invests in several target companies.
  - Carry is based on ***aggregate*** profits, thus more established funds are less prone to risk shifting.
- Importance of GP reputation (number of prior deals)
  - MBOs are one-off transactions.
  - Fund led buyouts need less bank monitoring.
    - Incentives
    - Liquidity
    - Reputation: Future fund raising depends on prior performance
- "Irrational exuberance": "Hot" debt markets and new players have led to lower credit risk spreads, easier terms and greater use of leverage.

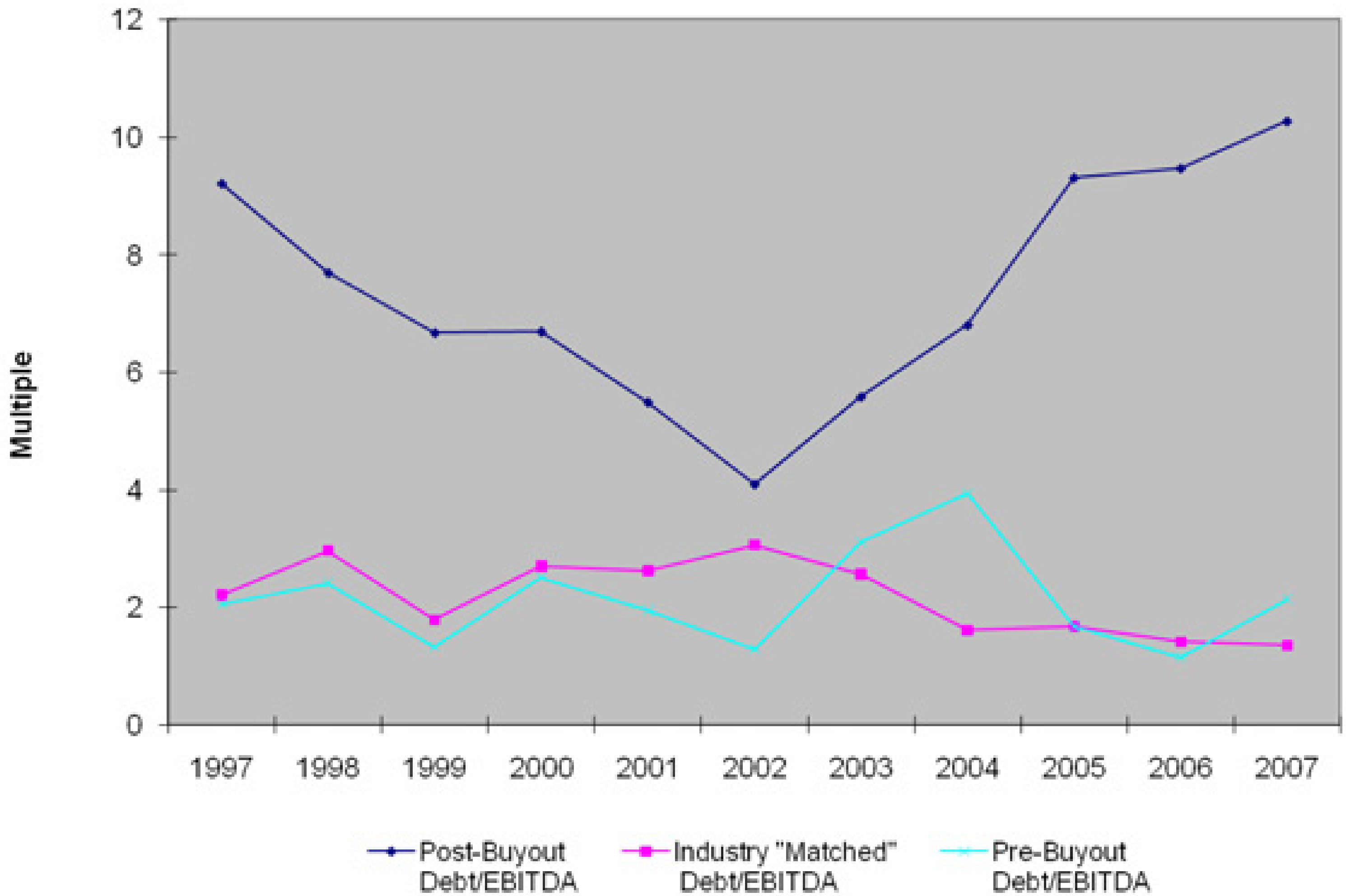
Some Empirical Implications

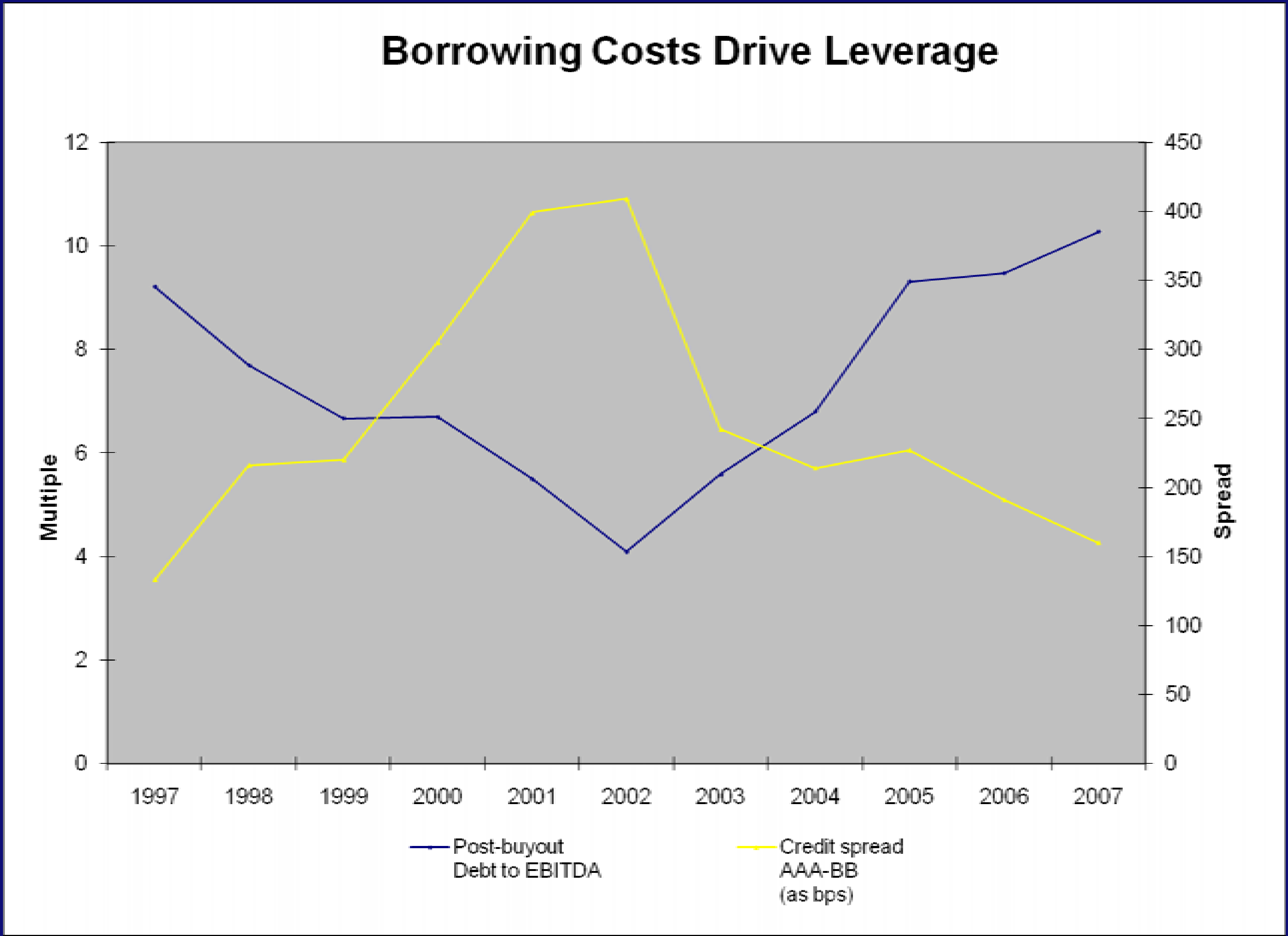
- Buyout leverage should be unrelated to industry leverage.
- Buyout leverage should be very sensitive to borrowing cost.
- More reputable buyout groups will use more leverage.
- More reputable buyout groups need less bank and covenant heavy debt.

Post-Buyout Leverage versus Industry Leverage

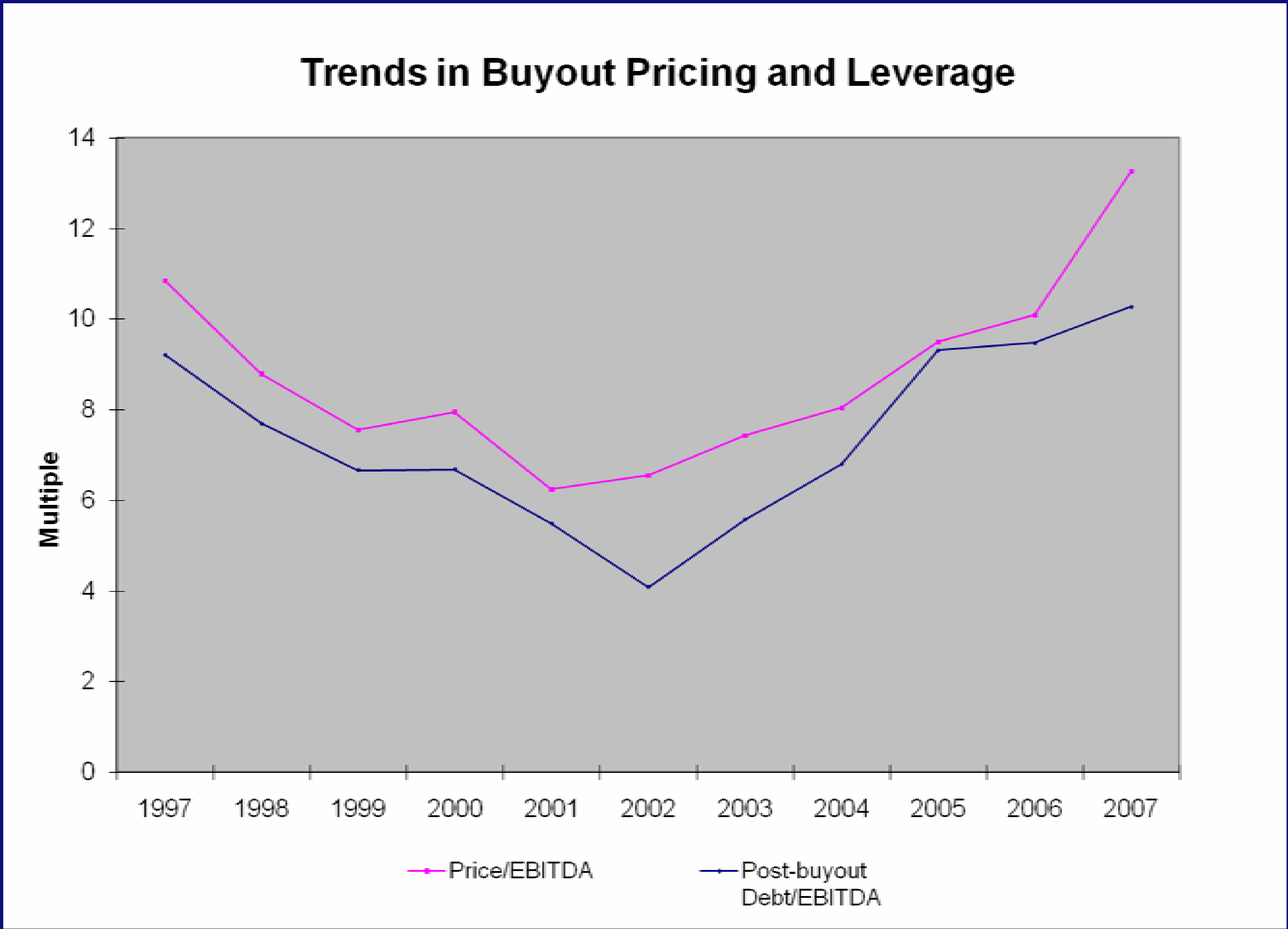


Trends in Public Company Buyout Leverage





Borrowing Costs Drive Leverage
12
10
8
6
4
2
0
Multiple
450
400
350
300
250
200
150
100
50
0
Spread
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
Post-buyout Debt to EBITDA
Credit spread AAA-BB (as bps)


Trends in Buyout Pricing and Leverage
14
12
10
8
6
4
2
0
Multiple
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
Price/EBITDA
Post-buyout Debt/EBITDA

Instrumental Variable Regression Relating Purchase Price Multiples to Credit Market Conditions for a Sample of Public Firm Buyouts 1997-2007
(t statistics in parentheses)

	First Stage Log/(Post Buyout Debt//EBITDA)		IV Log/(Price/EBITDA)	
Log (Total Post Buyout Debt/EBITDA)			.757 (6.26)	.647 (6.23)
Log Industry Enterprise Value/EBITDA	.367 (4.13)	**.224** **(2.25)**	.253 (3.31)	.283 (4.36)
Projected Change EBITDA/Sales		**.434** **(8.14)**		.173 (3.50)
Credit Risk Spread	-.118 (-3.04)	**-.126** **(-2.22)**		
EBITDA /Sales Volatility	-.007 (-2.11)	**-.008** **(-2.12)**		
Lead Fund Reputation	.095 (2.97)	**.121** **(2.92)**		
Constant	1.39 (5.93)	**1.07** **(3.51)**	.135 (.414)	.115 (.791)
R^2	.27	**.52**	.70	.82

Instrumental Variable Regression Relating Purchase Price Multiples to Credit Market Conditions for a Sample of Public Firm Buyouts 1997-2007
(t statistics in parentheses)

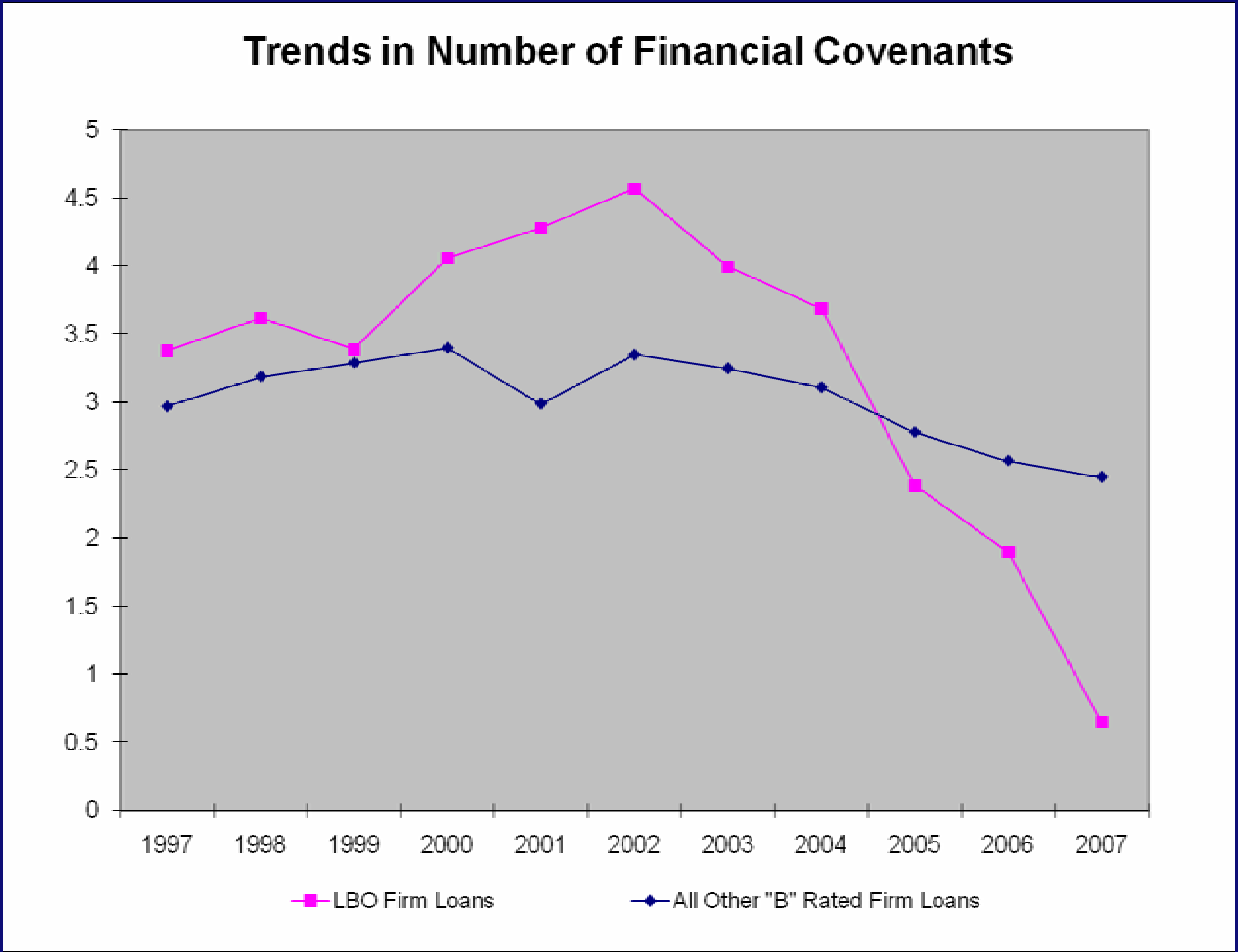
	First Stage Log/(Post Buyout Debt//EBITDA)		**IV Log/(Price/EBITDA)**	
Log (Total Post Buyout Debt/EBITDA)			.757 (6.26)	**.647** **(6.23)**
Log Industry Enterprise Value/EBITDA	.367 (4.13)	.224 (2.25)	.253 (3.31)	**.283** **(4.36)**
Projected Change EBITDA/Sales		.434 (8.14)		**.173** **(3.50)**
Credit Risk Spread	-.118 (-3.04)	-.126 (-2.22)		
EBITDA Volatility	-.007 (-2.11)	-.008 (-2.12)		
Lead Fund Reputation	.095 (2.97)	.121 (2.92)		
Constant	1.39 (5.93)	1.07 (3.51)	.135 (.414)	**.115** **(.791)**
R^2	.27	.52	.70	**.82**

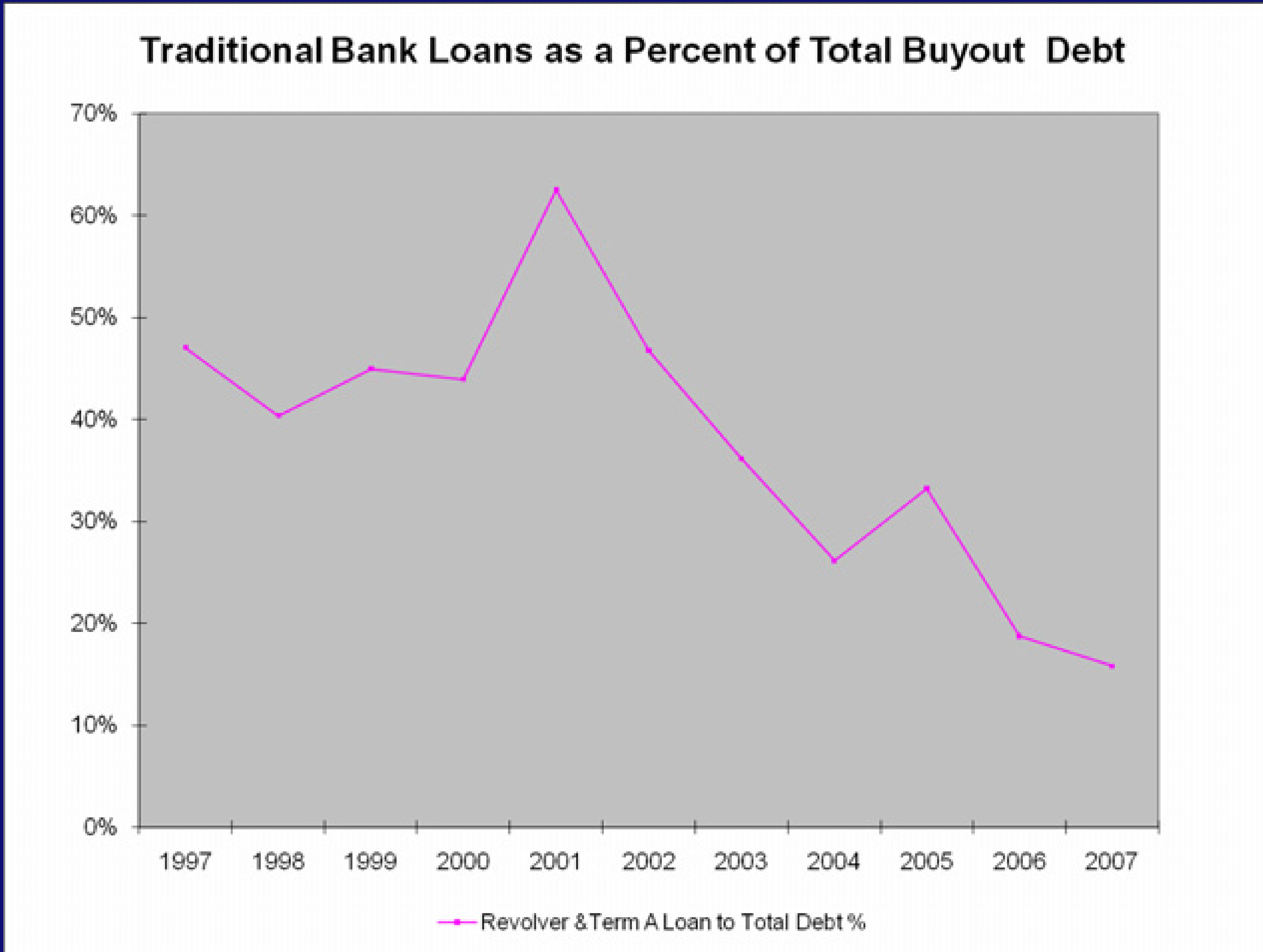
The Story So Far Concerning the Amount of Leverage

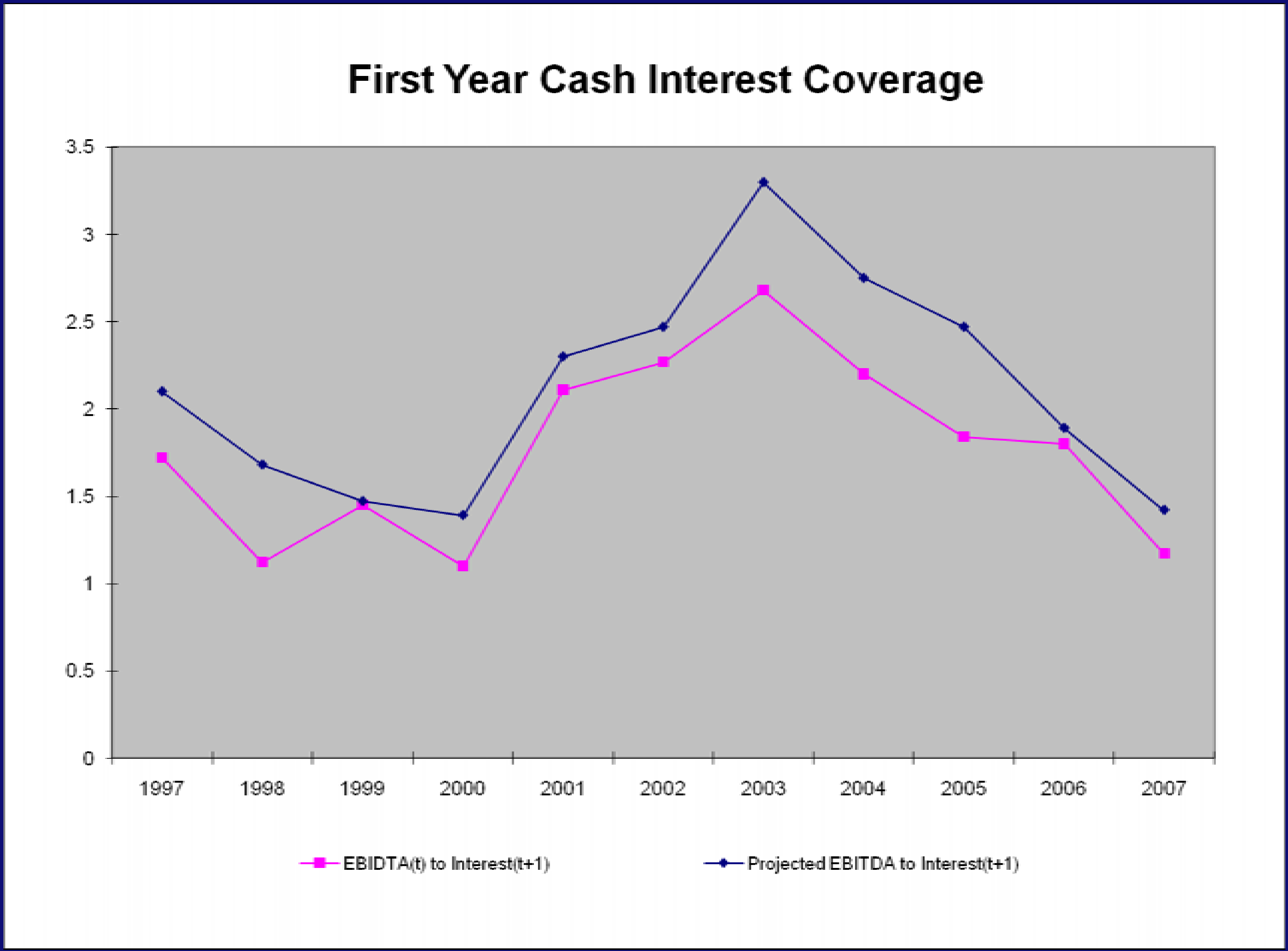
- Post buyout leverage is related to credit risk spreads, operating risk, cash flow growth and fund reputation.
- Leverage effects buyout multiples.
- Leverage and deal multiples are only slightly higher than in the late 1990’s (no structural shift).

Recent Trends in Deal Structure

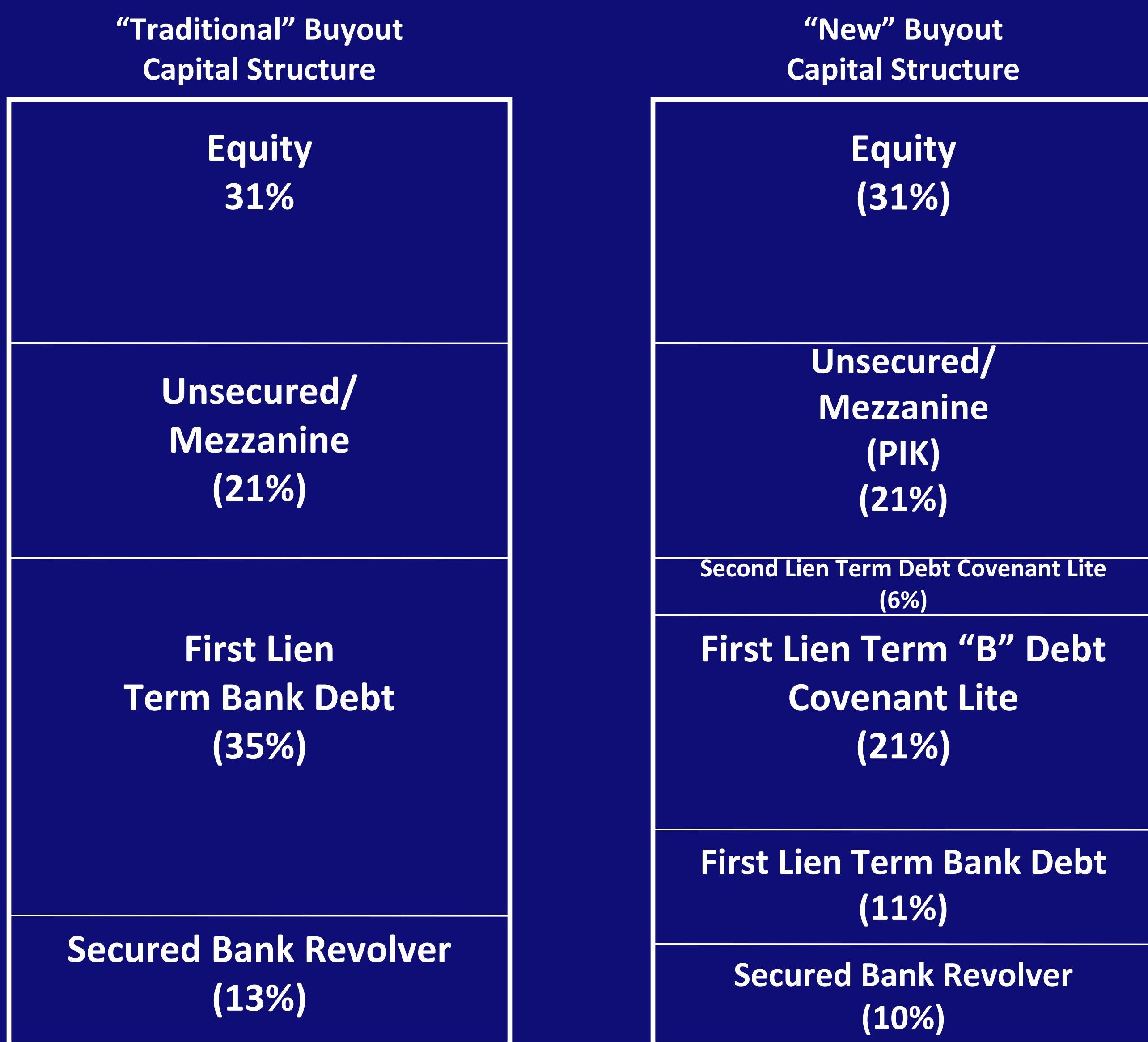
- “Bank” Loans increasingly have “bond” like features.
  – Few or no maintenance covenants .
  – Loans with no amortization .
  – Non-bank investors in the syndicate .
  – Second lien loans.
- Less senior secured “bank” debt.
- Interest rate toggle/PIK on unsecured debt.


Trends in Number of Financial Covenants
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
LBO Firm Loans
All Other "B" Rated Firm Loans


Traditional Bank Loans as a Percent of Total Buyout Debt
70%
60%
50%
40%
30%
20%
10%
0%
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
Revolver & Term A Loan to Total Debt %


First Year Cash Interest Coverage
3.5
3
2.5
2
1.5
1
0.5
0
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
EBIDTA(t) to Interest(t+1)
Projected EBITDA to Interest(t+1)

Changes in the Debt Structure



Do Recent Changes in Deal Structure Mean There is a "Bubble"?

- The bubble perspective: Less secured bank debt and fewer covenants mean borrowers have a *very* long leash.
  - Maintenance covenants provide banks with "state contingent" control rights (technical defaults lead to higher loan rates and less availability).
  - Technical defaults on bank loans are frequent.
  - Cross acceleration clauses make technical defaults less costly with covenant lite debt.
  - Recovery values are positively related to the amount of senior **bank** debt.
  - Non-Amortizing and PIK structure lower "short term" fixed obligations.

Is Covenant Lite a Sign of a "Bubble"?

- Rational markets perspective:
  - Domestic high yield default rates are currently very low.
  - Maintenance covenants aren't needed with coverage ratios close to 1.
  - Most (but not all) deals still have a traditional "covenanted" revolver.
  - Reputable private equity funds need less bank monitoring.
  - Deal terms are significantly related to credit spreads, risk and GP reputation.

Determinants of Loan Spreads, Covenant Structure and Reliance on Bank Debt
Sample Consists of 181 Public Company LBO's 1997 through First Half 2007

Dependent Variable	**Value Weighted Bank Loan Spread (bsp over LIBOR)**		Maximum Number of Financial Covenants in Facility		"Narrow" Bank Debt/Total Debt	
Credit Spread	**.314**	.313	.865	.865	-.001	.003
	(5.00)	(4.86)	(6.40)	(6.45)	(-.03)	(.13)
EBITDA/Sales Volatility	**3.38**	3.39	.036	.037	.004	.004
	(3.53)	(3.55)	(4.36)	(4.38)	(2.80)	(3.27)
Bank Debt/Enterprise Value	**-42.15**		-.094			
	(-1.43)		(-.16)			
Enterprise Value ($billions)					-.009	
					(-2.26)	
Lead Fund Reputation	**-18.01**	-15.26	-.458	-.453	-.063	-.072
	(-2.60)	(-2.67)	(-3.44)	(-3.56)	(-2.72)	(-3.11)
Constant	**235.19**	217.32	1.48	1.44	.498	.484
	(9.22)	(9.67)	(4.36)	(3.26)	(5.63)	(5.50)
R^2	**.21**	.21	.30	.32	.09	.08

Determinants of Loan Spreads, Covenant Structure and Reliance on Bank Debt
Sample Consists of 185 Public Company LBO's 1997 through First Half 2007

Dependent Variable	Value Weighted Bank Loan Spread (bsp over LIBOR)		**Maximum Number of Financial Covenants in Facility**		"Narrow" Bank Debt/Total Debt	
Credit Spread	.314 (5.00)	.313 (4.86)	**.865** **(6.40)**	.865 (6.45)	-.001 (-.03)	.003 (.13)
EBITDA/Sales Volatility	3.38 (3.53)	3.39 (3.55)	**.036** **(4.36)**	.037 (4.38)	.004 (2.80)	.004 (3.27)
Bank Debt/Enterprise Value	-42.15 (-1.43)		**-.094** **(-.16)**			
Enterprise Value ($billions)					-.009 (-2.26)	
Lead Fund Reputation	-18.01 (-2.60)	-15.26 (-2.67)	**-.458** **(-3.44)**	-.453 (-3.56)	-.063 (-2.72)	-.072 (-3.11)
Constant	235.19 (9.22)	217.32 (9.67)	**1.48** **(4.36)**	1.44 (3.26)	.498 (5.63)	.484 (5.50)
R^2	.21	.21	**.30**	.32	.09	.08

Determinants of Loan Spreads, Covenant Structure and Reliance on Bank Debt
Sample Consists of 185 Public Company LBO's 1997 through First Half 2007

Dependent Variable	Value Weighted Bank Loan Spread (bsp over LIBOR)		Maximum Number of Financial Covenants in Facility		**"Narrow" Bank Debt/Total Debt**	
Credit Spread	.314 (5.00)	.313 (4.86)	.865 (6.40)	.865 (6.45)	**-.001** **(-.03)**	.003 (.13)
EBITDA/Sales Volatility	3.38 (3.53)	3.39 (3.55)	.036 (4.36)	.037 (4.38)	**.004** **(2.80)**	.004 (3.27)
Bank Debt/Enterprise Value	-42.15 (-1.43)		-.094 (-.16)			
Enterprise Value ($billions)					**-.009** **(-2.26)**	
Lead Fund Reputation	-18.01 (-2.60)	-15.26 (-2.67)	-.458 (-3.44)	-.453 (-3.56)	**-.063** **(-2.72)**	-.072 (-3.11)
Constant	235.19 (9.22)	217.32 (9.67)	1.48 (4.36)	1.44 (3.26)	**.498** **(5.63)**	.484 (5.50)
R^2	.21	.21	.30	.32	**.09**	.08

Conclusions

- Credit spreads and terms drive leverage and deal values in public buyouts.
- GP reputation effects deal terms.
- The jury is still out on whether covenant lite deals make sense.