

# Managers' Personal Bankruptcy Costs and Risk-Taking

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- Effect of managers' personal bankruptcy costs on firms' financing and investment decisions
- Ex ante incentive effects before firms file for bankruptcy
- Theory:
  - High personal bankruptcy costs reduce strategic default, risk-shifting, rent extraction (Skeel 1993; Hart, Moore 1994; Zwiebel 1996)
  - High personal bankruptcy costs increase risk-aversion (Donaldson 1969; Amihud, Lev 1981; Rasmussen 1994)
- No direct empirical evidence

- **Laboratory:** Bankruptcy reform in Korea:
  - Old system:
    - Management replaced by receiver, firm sold to new investors
  - New system:
    - Management stay, manager proposes reorganization plan (similar to Chapter 11)
  - Reform process initiated by pressure from IMF and World Bank during 1997 Asian Financial Crisis
  - Change bankruptcy law to comply with “international best practice” (US law)

## Reorganization Cases

	I All filings	II Composition	III Reorganization	IV Rehabilitation
Number filings	421	25	42	354
Share liquidation (%)	36.34	60.00	26.19	35.88
Duration (months)	41.98	56.56	34.12	41.88
CEO stay (%)	79.81	88.00	<b>4.76</b>	<b>88.14</b>
CEO stay (months)	41.07	56.04	8.55	43.87
Ownership transfer (%)	30.71	25.00	<b>90.91</b>	<b>19.09</b>

- In pre-reform workouts 83% of CEOs replaced as well

## Real Effects of the Reform - Bankruptcy Filings & Workouts

Panel A: Bankruptcy Filings		I	II	III	IV
Year	Reorganization	Composition	Rehabilitation	Liquidation	
2001	31	51		170	
2002	28	29		108	
2003	38	48		303	
2004	35	81		162	
2005	22	35		129	
2006			117	132	
2007			215	132	
2008			582	191	
2009			1192	226	
2010			1227	253	

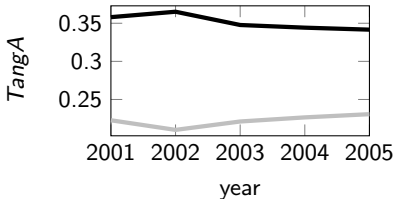
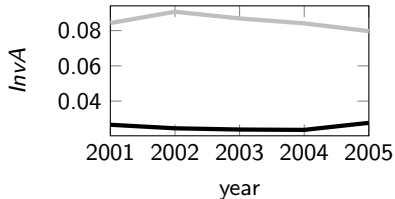
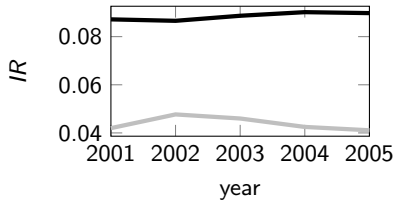
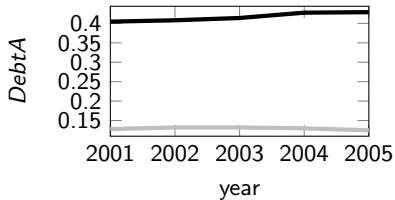
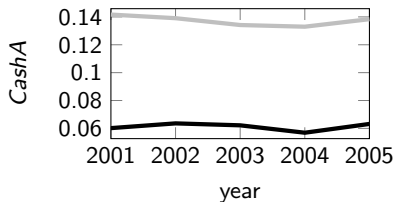
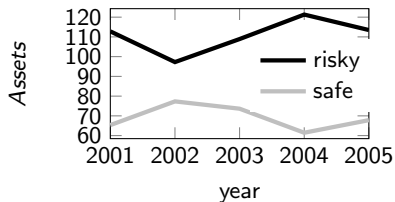
  

Panel B: Workouts		I	II	III	IV
Year	Total Cases Ended	Successful	Failed	Failure Rate	
2004-Q4	360	144	216	<b>0.6000</b>	
2005	581	322	259	<b>0.4458</b>	
2006	1491	1161	330	<b>0.2213</b>	
2007	1353	1010	343	<b>0.2535</b>	

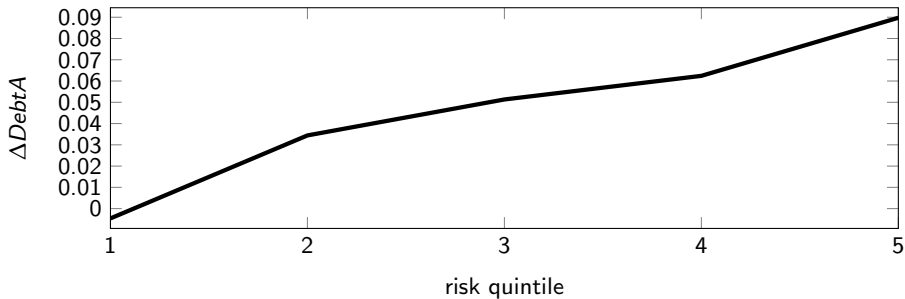
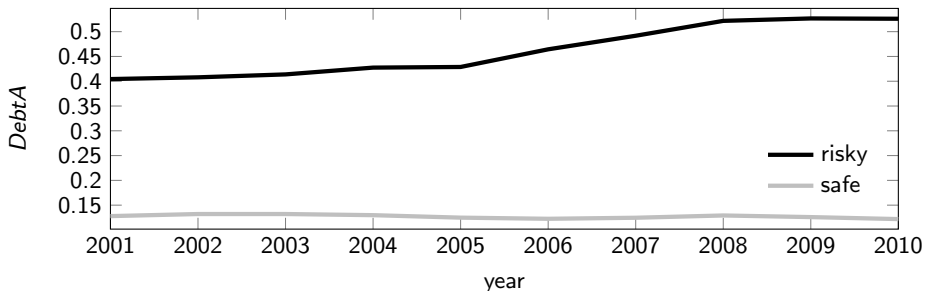
# Data

Panel A: Accounting data		obs	mean	median	std
Total assets (in million KRW)	full sample	183,889	78,977	12,374	907,501
	low risk	36,781	<b>173,466</b>	13,457	1,883,279
	high risk	36,773	<b>65,275</b>	14,473	543,166
Debt to assets	full sample	183,856	0.3448	0.3077	0.2834
	low risk	36,770	<b>0.1254</b>	0.0635	0.1635
	high risk	36,758	<b>0.4824</b>	0.4136	0.3820
Interest rates	full sample	176,716	0.0665	0.0465	0.01086
	low risk	32,913	<b>0.0416</b>	0.0214	0.0973
	high risk	35,022	<b>0.0969</b>	0.0577	0.1554
Cash to assets	full sample	183,377	0.0728	0.0283	0.1146
	low risk	36,699	<b>0.1322</b>	0.0772	0.1514
	high risk	36,623	<b>0.0588</b>	0.0152	0.1148
Invest to assets	full sample	181,275	0.0651	0.0007	0.2183
	low risk	36,592	<b>0.0797</b>	0.0053	0.2240
	high risk	35,350	<b>0.0435</b>	-0.0009	0.2289

# Descriptives - Time-Series

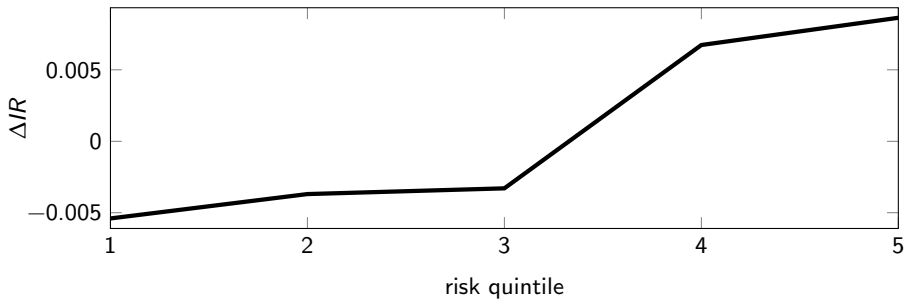
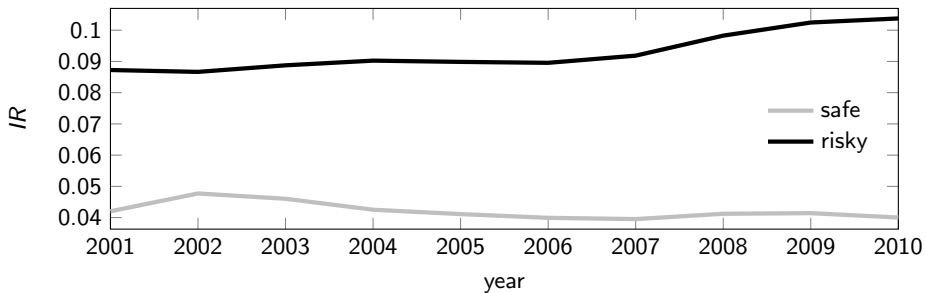


## Firms' Financing Decisions Around the UBA

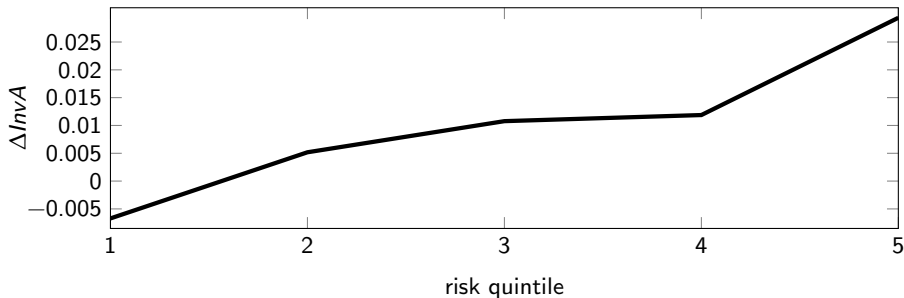
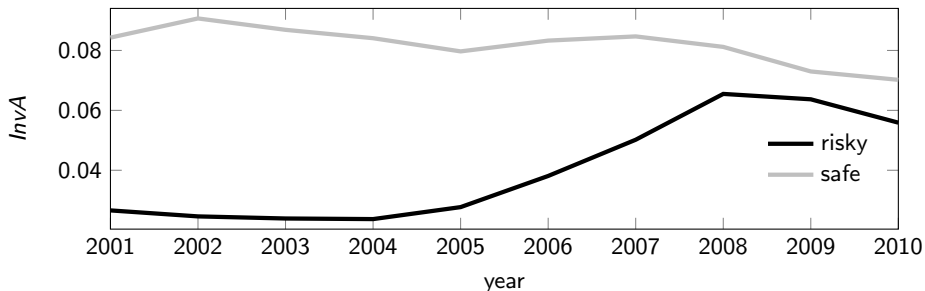




## Cost of Credit Around the UBA



## Firms' Investment Decisions Around the UBA



# Reform Effect

Dep var:	I <i>DebtA<sub>it</sub></i>	II <i>DebtA<sub>it</sub></i>	III <i>DebtA<sub>it</sub></i>	IV <i>IR<sub>it</sub></i>	V <i>IR<sub>it</sub></i>	VI <i>IR<sub>it</sub></i>	VII <i>InvA<sub>it</sub></i>	VIII <i>InvA<sub>it</sub></i>	IX <i>InvA<sub>it</sub></i>
<i>DR<sub>it</sub></i>	0.0777*** [0.0027]	0.0655*** [0.0016]	0.0661*** [0.0017]	0.0114*** [0.0015]	0.0173*** [0.0014]	0.0177*** [0.0015]	-0.0158*** [0.0017]	-0.0100*** [0.0008]	-0.0102*** [0.0008]
<i>DR<sub>it</sub> * event<sub>t</sub></i>	0.0249*** [0.0052]	0.0076*** [0.0021]	<b>0.0084***</b> [0.0020]	0.0034*** [0.0013]	0.0031*** [0.0011]	<b>0.0025***</b> [0.0009]	0.0087*** [0.0016]	0.0060*** [0.0009]	<b>0.0067***</b> [0.0010]
Observations	183,854	163,444	163,444	176,726	157,820	157,820	194,469	162,929	162,929
R-squared	0.220	0.300	0.321	0.031	0.111	0.142	0.009	0.058	0.093
Year FE	yes	yes	-	yes	yes	-	yes	yes	-
Ind FE	no	yes	-	no	yes	-	no	yes	-
Ind-Year FE	no	no	yes	no	no	yes	no	no	yes
Controls	no	yes	yes	no	yes	yes	no	yes	yes
Clustered SE	ind	ind	ind	ind	ind	ind	ind	ind	ind

## Reform Effect - Industry-Level Sorting

Dep var:	I <i>DebtA<sub>it</sub></i>	II <i>IR<sub>it</sub></i>	III <i>InvA<sub>it</sub></i>
<i>DR<sub>ind</sub> * event<sub>t</sub></i>	0.0023** [0.0010]	0.0039** [0.0015]	0.0021** [0.0009]
Observations	154,561	143,015	154,118
R-squared	0.207	0.116	0.057
Year FE	yes	yes	yes
Ind FE	yes	yes	yes
Controls	yes	yes	yes
Clustered SE	ind	ind	ind

- Variation in managers' personal bankruptcy costs
- Cross-sectional differences in private benefits of control through ownership
  - Differences in private benefits of control in family firms
  - Differences in CEO wealth concentration through inside shareholdings

# Cross-Sectional Analysis - Ownership

Dep var:	I <i>DebtA<sub>it</sub></i>	II <i>IR<sub>it</sub></i>	III <i>InvA<sub>it</sub></i>	IV <i>DebtA<sub>it</sub></i>	V <i>IR<sub>it</sub></i>	VI <i>InvA<sub>it</sub></i>	VII <i>DebtA<sub>it</sub></i>	VIII <i>IR<sub>it</sub></i>	IX <i>InvA<sub>it</sub></i>
<i>DR<sub>it</sub></i>	0.0585*** [0.0024]	0.0181*** [0.0015]	-0.0086*** [0.0011]	0.0498*** [0.0032]	0.0189*** [0.0021]	-0.0085*** [0.0015]	0.0511*** [0.0035]	0.0215*** [0.0015]	-0.0010 [0.0015]
<i>DR<sub>it</sub> * event<sub>t</sub></i>	0.0066*** [0.0021]	0.0032** [0.0015]	0.0054*** [0.0012]	-0.0007 [0.0031]	0.0037* [0.0023]	0.0036** [0.0017]	0.0045 [0.0030]	0.0006 [0.0017]	0.0037** [0.0018]
<i>family<sub>i</sub></i>	-0.0245*** [0.0061]	0.0042* [0.0025]	0.0076 [0.0046]						
<i>family<sub>i</sub> * event<sub>t</sub></i>	-0.0149** [0.0075]	0.0019 [0.0035]	-0.0198*** [0.0054]						
<i>family<sub>i</sub> * DR<sub>it</sub></i>	0.0107*** [0.0025]	-0.0093*** [0.0011]	-0.0015 [0.0014]						
<i>family<sub>i</sub> * DR<sub>it</sub> * event<sub>t</sub></i>	<b>0.0073***</b> [0.0026]	-0.0001 [0.0014]	<b>0.0052***</b> [0.0016]						
<i>herf owner<sub>i</sub></i>				-0.0060*** [0.0022]	0.0008 [0.0013]	0.0024 [0.0016]			
<i>herf owner<sub>i</sub> * event<sub>t</sub></i>				-0.0075*** [0.0024]	0.0013 [0.0014]	-0.0067*** [0.0018]			
<i>herf owner<sub>i</sub> * DR<sub>it</sub></i>				0.00048*** [0.0008]	-0.0007 [0.0005]	-0.0003 [0.0005]			
<i>herf owner<sub>i</sub> * DR<sub>it</sub> * event<sub>t</sub></i>				<b>0.0037***</b> [0.0009]	-0.0002 [0.0005]	<b>0.0014***</b> [0.0005]			
<i>ceo owner<sub>i</sub></i>							0.0089*** [0.0024]	0.0048*** [0.0010]	0.0161*** [0.0020]
<i>ceo owner<sub>i</sub> * event<sub>t</sub></i>							-0.0056** [0.0024]	-0.0016* [0.0010]	-0.0082*** [0.0020]
<i>ceo owner<sub>i</sub> * DR<sub>it</sub></i>							0.0044*** [0.0009]	-0.0016*** [0.0003]	-0.0029*** [0.0005]
<i>ceo owner<sub>i</sub> * DR<sub>it</sub> * event<sub>t</sub></i>							<b>0.0018**</b> [0.0009]	0.0009** [0.0004]	<b>0.0012**</b> [0.0006]
Observations	124,502	121,262	124,221	124,502	121,262	124,221	124,502	121,262	124,221
R-squared	0.338	0.147	0.110	0.342	0.147	0.110	0.393	0.147	0.116
Ind-Year FE	yes	yes	yes	yes	yes	yes	yes	yes	yes
Controls	yes	yes	yes	yes	yes	yes	yes	yes	yes
Clustered SE	ind	ind	ind	ind	ind	ind	ind	ind	ind

- More investment under management stay can be overinvestment:
  - Empire building
  - Risk-shifting
- Or be investment in positive NPV projects:
  - Relaxation of underinvestment problem
  - Owner-managers willing to take on more risk
- Two dimensions to provide suggestive evidence:
  - Investing firms' investment opportunities
  - Change in firms' profits

# Cross-Sectional Analysis - Investment Opportunities

Dep var:	I <i>DebtA<sub>it</sub></i>	II <i>IR<sub>it</sub></i>	III <i>InvA<sub>it</sub></i>
<i>DR<sub>it</sub></i>	0.0866*** [0.0027]	0.0206*** [0.0017]	0.0033** [0.0015]
<i>DR<sub>it</sub> * event<sub>t</sub></i>	-0.0067** [0.0029]	-0.0021 [0.0019]	0.0025 [0.0017]
<i>IO<sub>i</sub></i>	0.0400*** [0.0025]	0.0042*** [0.0013]	0.0359*** [0.0031]
<i>IO<sub>i</sub> * event<sub>t</sub></i>	-0.0144*** [0.0025]	-0.0025* [0.0014]	-0.0194*** [0.0026]
<i>IO<sub>i</sub> * DR<sub>it</sub></i>	-0.0078*** [0.0008]	-0.0015*** [0.0004]	-0.0044*** [0.0007]
<i>IO<sub>i</sub> * DR<sub>it</sub> * event<sub>t</sub></i>	<b>0.0058***</b> [0.0008]	0.0019*** [0.0004]	<b>0.0016***</b> [0.0006]
Observations	139,034	135,361	139,916
R-squared	0.340	0.140	0.117
Ind-Year FE	yes	yes	yes
Controls	yes	yes	yes
Clustered SE	ind	ind	ind



# Profits

Dep var:	I	II	III	IV	V	VI	VII	VIII
	$\Delta Profits_{it,t-1} / Assets_{it-1}$							
$DR_{it}$	0.0093*** [0.0008]	0.0126*** [0.0008]	0.0118*** [0.0008]	0.0034*** [0.0009]	0.0056*** [0.0015]	0.0067*** [0.0013]	0.0028* [0.0015]	0.0106*** [0.0010]
$DR_{it} * event_t$	<b>0.0014*</b> [0.0007]	<b>0.0027***</b> [0.0008]	<b>0.0027***</b> [0.0009]	0.0007 [0.0012]	-0.0024 [0.0019]	-0.0019 [0.0019]	0.0011 [0.0023]	-0.0055*** [0.0013]
$family_i * DR_{it} * event_t$				<b>0.0035***</b> [0.0013]				
$herf\ owner_j * DR_{it} * event_t$					<b>0.0019***</b> [0.0004]			
$ceo\ owner_i * DR_{it} * event_t$						<b>0.0015***</b> [0.0005]		
$tang_i * DR_{it} * event_t$							<b>0.0004</b> [0.0006]	
$IO_i * DR_{it} * event_t$								<b>0.0024***</b> [0.0005]
Observations	183,866	164,102	164,102	138,140	138,140	138,140	143,249	139,250
R-squared	0.013	0.028	0.082	0.119	0.119	0.119	0.122	0.127
Year FE	yes	yes	-	-	-	-	-	-
Ind FE	no	yes	-	-	-	-	-	-
Ind-Year FE	no	no	yes	yes	yes	yes	yes	yes
Controls	no	yes	yes	yes	yes	yes	yes	yes
Clustered SE	ind	ind	ind	ind	ind	ind	ind	ind

# Firm Risk

Dep var:	I	II	III	IV	V	VI	VII	VIII
	<i>cf vola<sub>it</sub></i>							
<i>DR<sub>it</sub></i>	0.1439*** [0.0180]	0.1251*** [0.0194]	0.1327*** [0.0180]	0.2486*** [0.0289]	0.5065*** [0.0466]	0.4043*** [0.0461]	0.0874** [0.0395]	0.4758*** [0.0361]
<i>DR<sub>it</sub> * event<sub>t</sub></i>	0.0528*** [0.0178]	0.0556*** [0.0159]	0.0398*** [0.0147]	0.0381 [0.0287]	0.0047 [0.0423]	0.0084 [0.0442]	0.0433 [0.0462]	-0.1199*** [0.0389]
<i>family<sub>i</sub> * DR<sub>it</sub> * event<sub>t</sub></i>				<b>0.0696*</b> [0.0366]				
<i>herf owner<sub>i</sub> * DR<sub>it</sub> * event<sub>t</sub></i>					<b>0.0223**</b> [0.0109]			
<i>ceo owner<sub>i</sub> * DR<sub>it</sub> * event<sub>t</sub></i>						<b>0.0203*</b> [0.0122]		
<i>tang<sub>i</sub> * DR<sub>it</sub> * event<sub>t</sub></i>							<b>0.0020</b> [0.0139]	
<i>IO<sub>i</sub> * DR<sub>it</sub> * event<sub>t</sub></i>								<b>0.0558***</b> [0.0120]
Observations	43,109	43,109	43,109	28,986	28,986	28,986	34,190	33,015
R-squared	0.373	0.407	0.417	0.461	0.467	0.463	0.450	0.460
Event FE	yes	yes	-	-	-	-	-	-
Ind FE	no	yes	-	-	-	-	-	-
Ind-Event FE	no	no	yes	yes	yes	yes	yes	yes
Controls	no	yes	yes	yes	yes	yes	yes	yes
Clustered SE	ind	ind	ind	ind	ind	ind	ind	ind

## Reform Effect - Innovation

Dep var:	I	II	III	IV	V	VI	VII
	$RnDA_{it}$	$RnDA_{it}$	$RnDA_{it}$	$PatentsA_{it}$	$PatentsA_{it}$	$PatentsA_{it}$	$PatentsA_{it}$
$DR_{it}$	-0.0044*** [0.0007]	-0.0018*** [0.0005]	-0.0022** [0.0006]	-0.0091*** [0.0019]	-0.0075*** [0.0017]	-0.0070*** [0.0018]	-0.0034*** [0.0008]
$DR_{it} * event_t$	0.0010* [0.0006]	0.0012** [0.0006]	<b>0.0013**</b> [0.0006]	0.0052*** [0.0016]	0.0042*** [0.0015]	<b>0.0036**</b> [0.0016]	<b>0.0015**</b> [0.0007]
Observations	30,006	28,603	28,603	68,270	64,748	64,748	164,120
R-squared	0.015	0.203	0.276	0.008	0.077	0.132	0.116
Year FE	yes	yes	-	yes	yes	-	-
Ind FE	no	yes	-	no	yes	-	-
Ind-Year FE	no	no	yes	no	no	yes	yes
Controls	no	yes	yes	no	yes	yes	yes
Clustered SE	ind	ind	ind	ind	ind	ind	ind

- Alternative contracting solutions:
  - Private contracting (workouts, compensation contracts)
  - Different forms of financing
- External validity:
  - Ownership
  - Private benefits
  - Governance

- Negative effect of stronger creditor rights on demand for credit
- Managers' personal bankruptcy costs have a large impact on corporate risk-taking
- Suggestive evidence that firms forego positive NPV projects when managers' personal bankruptcy costs are high