



Bankruptcy Study

OVERVIEW



- Goal: Determine if ERS's technology can provide an "early warning" for companies at risk of bankruptcy.
- Period: 12/30/2003 to 4/17/2019
- Method:
 - Identified bankrupt companies with a high market cap of at least \$800 million, delisted 12/30/2003 or later.
 - 223 companies met these criteria.
 - Obtained their stock prices for each of the preceding 7 years before they were delisted.
 - Calculated ERS's **Price Risk** and **Financial Risk** indicators for each of the 7 years prior to their delisting.
 - For dates on which ERS could not calculate a company's **Price Risk** or **Financial Risk**, those companies were excluded
 - ERS used the **larger** of the **Price Risk** or **Financial Risk** indicators
 - Calculated the percentage decline for each stock in the time periods prior to their delisting.

THIS STUDY PROVIDES COMPELLING EVIDENCE THAT ERS'S RISK MEASUREMENT TECHNOLOGY PROVIDES AN "EARLY WARNING" OF THE RISKS OF BANKRUPTCY



The table on the right shows groups of companies arranged by both their Risk Ratings (rows) and the time period prior to delisting (columns).

Column 1 indicates the group's Risk Ratings: the larger of the PRI or the FRI.

Row 1 indicates the length of time prior to the company's delisting.

The higher the risk rating, the stronger the signal ERS would have given to avoid these stocks and their resulting losses.

ERS identified 75% of all bankrupt companies in this study as "high risk" (70 to 100) 3 years before delisting.

5 years before delisting, ERS rated 94% of these companies between "weak" and "very weak" (40 to 100).

4 years before their delisting, only 3 companies were rated "safe" (0 to 20).

ZERO delisted companies had an ERS Risk Rating under 10 any time 7 years prior to delisting.

Equity Risk Sciences makes investing safer and more profitable.

Risk Rating	1 Year Prior	1 ½ Years Prior	2 Years Prior	3 Years Prior	4 Years Prior	5 Years Prior	7 Years Prior
70-100	166	162	167	153	134	128	115
	88%	84%	83%	75%	67%	68%	65%
50-100	182	184	191	185	179	166	150
	96%	95%	95%	91%	90%	88%	85%
40-100	183	188	195	191	183	176	158
	97%	97%	97%	94%	92%	94%	90%
20-40	6	6	6	10	13	9	17
	3%	3%	3%	5%	7%	5%	10%
10-20	0	0	1	2	3	3	1
	0%	0%	0%	1%	2%	2%	1%
0-10	0	0	0	0	0	0	0
	0%	0%	0%	0%	0%	0%	0%

	1 Year Prior	1 ½ Years Prior	2 Years Prior	3 Years Prior	4 Years Prior	5 Years Prior	7 Years Prior
<u>Total # of Co's</u>	<u>189</u>	<u>194</u>	<u>202</u>	<u>203</u>	<u>199</u>	<u>188</u>	<u>176</u>

HOW MANY OF THESE 223 NAMES DO YOU RECOGNIZE?



- | | | | |
|------------------------------|--------------------------------|-------------------------------------|---|
| 4 Kids Entertainment | BreitBurn Energy Partners | DEX ONE | General Motors |
| A123 Systems | Cal Dive International | Downey Financial | Global Power Equipment Group |
| Aaipharma | Calpine | Dynegy | Globix |
| Abitibibowater | Castle A M & Co | Earthshell | Gmx Resources |
| Adelphia Comms | Central European Dist. | Eastman Kodak | Goodrich Petroleum |
| Adeptus Health | Cenveo | Electroglas | Great Atlantic & Pacific Tea |
| Advanta | Champion Enterprises | Ener1 | GulfMark Offshore |
| Allied Nevada Gold | Charter Communications | Energy Conversion Devices | Hearst Argyle Television |
| Alpha Natural Resources | Chiquita Brands Int'l | Enron | Hercules Offshore |
| Ambac Financial Group | Christopher & Banks | Epl Oil & Gas | hhgregg |
| Amcore Financial | Circuit City Stores | Erin Energy | Hooper Holmes |
| American Home Mortgage | Cit Group | EV Energy Partners | Horsehead Holding |
| Ampal-American Israel | Citadel Broadcasting | Evergreen Energy | Hutchinson Technology |
| Angiotech Pharma | Cobalt Intl Energy | Evergreen Solar | Idearc |
| Arch Coal | Coldwater Creek | Exide Technologies | Indymac Bancorp |
| ARO Liquidation | Collins & Aikman | Fairpoint Communications | Interstate Bakeries |
| Atherogenics | Colonial Bancgroup | Fairway Group Holdings | Ipix |
| Atlas Air Worldwide | Corinthian Colleges | Federal Mogul | Irwin Financial |
| Atlas Resource Partners | Corus Bankshares | First NBC Bank Holding | Itt Educational Services |
| Atp Oil & Gas | Countrywide Financial | Firstfed Financial | Ivanhoe Energy |
| Aventine Renewable Energy | Covad Comms | Fleming Companies | Jackson Hewitt Tax Service |
| Bankunited Financial | Credence Systems | Flyi | James River Coal |
| Bearingpoint | Cumulus Media | Footstar | Jones Energy |
| Bethlehem Steel | Dana | Frontier Financial | Kid Brands |
| Bon-Ton Stores | Delphi | Furniture Brands International | Kior |
| Borders Group | Delta Air Lines | GateHouse Media | KIT digital |
| Boyds Collection | Delta Petroleum | Genco Shipping & Trading | K-V Pharmaceutical |
| Bpz Resources | Dendreon | General Maritime | Landamerica Financial Group |

HOW MANY OF THESE 223 NAMES DO YOU RECOGNIZE?



Leap Wireless Int'l	Nii Holdings	Ramp	Terrestar
Lear	Nortel Networks	Raser Technologies	Thornburg Mortgage
Lehman Brothers	North American Palladium	RCS Capital	Thq
Liberate Technologies	Northwest Airlines	Redback Networks	TLC Vision
Linn Energy	Nuverra Environmental Solutions	Republic Airways Holdings	Tousa
LinnCo	Oca	Rex Energy	Tower Automotive
Lodgenet Interactive	Oilsands Quest	Riverstone Networks	Triad Guaranty
Lodgian	Orexigen Therapeutics	Sandridge Energy	Triangle Petroleum
Lone Pine Resources	Osceola Gold	Savient Pharmaceuticals	Trident Microsystems
Loral Space & Comms	Overseas Shipholding Group	School Specialty	Trinity Capital
Magna Entertainment	Owens Corning	Sears Holdings	Trump Entertainment Resorts
Magnum Hunter Resources	Pacific Sunwear Of California	Seventy Seven Energy	Tumbleweed Comms
Mdi	Paragon Offshore	SFX Entertainment	Ual
Medical Staffing Network Holdings	Parker Drilling	Silicon Graphics	Ucbh Holdings
Memorial Production Partners LP	Patriot Coal	Sirva	Ultra Petroleum
Meruelo Maddux Properties	Peabody Energy	Six Flags Entertainment	Unilife
Midstates Petroleum	Penn Virginia	Smurfit Stone Container	Valence Technology
Midway Games	Peregrine Systems	Solutia	Verasun Energy
Milacron	Pff Bancorp	Spansion	Visteon
Mirant	Pmi Group	Spectrum Brands	Walter Investment Mgmt
Molycorp	Point Blank Solutions	Spiegel	Warren Resources
Monaco Coach	Powerwave Technologies	Standard Register	Washington Mutual
Movie Gallery	Primus Telecomms Group	Stone Energy	Wave Wireless
Mti Technology	Quantum Fuel Systems Tech	Storm Cat Energy	Wci Communities
Nanogen	Quicksilver Resources	Sulphco	Winn Dixie Stores
New Century Financial	Quicksilver	Sunedison	Worldcom
NexCen Brands	R H Donnelley	Swift Energy	Young Broadcasting
NextWave Wireless	Radioshack	Synergy Pharmaceuticals	